

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 April 2004 (29.04.2004)

PCT

(10) International Publication Number
WO 2004/035746 A2

- (51) International Patent Classification⁷: **C12N**
- (21) International Application Number:
PCT/US2003/032805
- (22) International Filing Date: 16 October 2003 (16.10.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
60/419,432 17 October 2002 (17.10.2002) US
- (71) Applicant (for all designated States except US): **DECODE GENETICS EHF**. [IS/IS]; Sturlugotu 8, IS-101 Reykjavik (IS).
- (72) Inventors; and
- (75) Inventors/Applicants (for US only): **HELGADOTTIR, Anna** [IS/IS]; Hamravik 86, IS-112 Reykjavik (IS). **GULCHER, Jeffrey, R.** [US/US]; 130 South Canal Street, #9M, Chicago, IL 60606 (US). **MANOLESCU, Andrei** [RO/IS]; Eskihlid 22a, IS-105 Reykjavik (IS).
- (74) Agents: **CARROLL, Alice, O.** et al.; Hamilton, Brook, Smith & Reynolds, P.C., 530 Virginia Road, P.O. Box 9133, Concord, MA 01742-9133 (US).

- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— without international search report and to be republished upon receipt of that report

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: SUSCEPTIBILITY GENE FOR MYOCARDIAL INFARCTION

(57) Abstract: Linkage of Myocardial Infarction (MI) and a locus on chromosome 13q12 is disclosed. In particular, the FLAP gene within this locus is shown by association analysis to be a susceptibility gene for MI. Pathway targeting for drug delivery and diagnosis applications in identifying those have MI or at risk of developing MI, in particular are described.



WO 2004/035746 A2

-1-

SUSCEPTIBILITY GENE FOR MYOCARDIAL INFARCTION

RELATED APPLICATION

This application claims the benefit of 60/419,432, filed October 17, 2002. The
5 entire teachings of the above application are incorporated herein by reference.

BACKGROUND OF THE INVENTION

Myocardial infarction (MI) is one of the most common diagnoses in
hospitalized patients in industrialized countries. Myocardial Infarction generally
10 occurs when there is an abrupt decrease in coronary blood flow following a
thrombotic occlusion of a coronary artery previously narrowed by atherosclerosis.
Infarction occurs when a coronary artery thrombus develops rapidly at a site a
vascular injury, which is produced or facilitated by factors such as cigarette smoking,
hypertension and lipid accumulation. In most cases, infarction occurs when an
15 atherosclerotic plaque fissures, ruptures or ulcerates and when conditions favor
thrombogenesis. In rare cases, infarction may be due to coronary artery occlusion
caused by coronary emboli, congenital abnormalities, coronary spasm, and a wide
variety of systemic, particularly inflammatory diseases.

Although classical risk factors such as smoking, hyperlipidemia, hypertension,
20 and diabetes are associated with many cases of coronary heart disease (CHD) and MI,
many patients do not have involvement of these risk factors. In fact, many patients
who exhibit one or more of these risk factors do not develop MI. Family history has
long been recognized as one of the major risk factors. Although some of the familial
clustering of MI reflects the genetic contribution to the other conventional risk
25 factors, a large number of studies have suggested that there are significant genetic
susceptibility factors, beyond those of the known risk factors (Friedlander Y, *et al.*, *Br
Heart J.* 1985; 53:382-7, Shea S. *et al.*, *J. Am. Coll. Cardiol.* 1984; 4:793-801, and
Hopkins P.N., *et al.*, *Am. J. Cardiol.* 1988; 62:703-7). Major genetic susceptibility
factors have not yet been identified.

-2-

SUMMARY OF THE INVENTION

As described herein, a locus on chromosome 13q12 has been identified as playing a major role in Myocardial Infarction (MI). The locus, herein after referred to as the MI locus, comprises nucleic acid that encodes 5-lipoxygenase activating protein
5 (ALOX5AP or FLAP), herein after referred to as FLAP.

The present invention relates to isolated nucleic acid molecules comprising a portion or the entire human FLAP nucleic acid or a variant thereof. In one embodiment, the nucleic acid molecule has at least one polymorphism that is correlated with the incidence of myocardial infarction. The invention also relates to
10 pathways targeting for drug delivery. A further embodiment of the invention is a method for the diagnosis of MI and a method for identification of susceptibility to myocardial infarction, by identifying polymorphisms in the FLAP nucleic acid, which identify those at risk. Also, described are haplotypes and SNPs that can be used to identify individuals with MI or at risk of developing MI. The polymorphism in the
15 FLAP nucleic acid can be indicated by detecting the presence of a haplotype, comprising one or more of the markers: DG00AAFIU, SG13S25, DG00AAJFF, DG00AAHII, DG00AAHID, B_SNP_310657, SG13S30, SG13S32, SG13S42, and SG13S35 at the 13q12 locus comprising a FLAP nucleic acid. The polymorphism further can comprise at least one of the polymorphisms as indicated in Table 3.

20 Identification of nucleic acids and polymorphisms in the MI locus can pave the way for a better understanding of the disease process, which in turn can lead to improved diagnostic and therapeutic methods.

The invention further pertains to methods of diagnosing myocardial infarction or a susceptibility to myocardial infarction, comprising detecting an alteration in the
25 expression or composition of a polypeptide encoded by a FLAP nucleic acid in a test sample, in comparison with the expression or composition of a polypeptide encoded by FLAP in a control sample, wherein the presence of an alteration in expression or composition of the polypeptide in the test sample is indicative of myocardial infarction or a susceptibility to myocardial infarction.

30 The invention also relates to an isolated nucleic acid molecule comprising a FLAP nucleic acid, wherein the FLAP nucleic acid has a nucleic acid sequence of

-3-

SEQ ID NO: 1 or SEQ ID NO: 3, or the complement of SEQ ID NO: 1 or SEQ ID NO: 3, wherein the nucleic acid molecule comprises a polymorphism as indicated in Table 3.

In another embodiment, the invention relates to an isolated nucleic acid molecule having a polymorphism as indicated in Table 3, which hybridizes under high stringency conditions to a nucleic acid sequence of SEQ ID NO: 1 or SEQ ID NO: 3, or the complement of SEQ ID NO: 1 or SEQ ID NO: 3.

In yet another embodiment, a method for assaying for the presence of a first nucleic acid molecule in a sample is described, comprising contacting said sample with a second nucleic acid molecule, where the second nucleic acid molecule comprises a nucleic acid sequence of SEQ ID NO: 1 or SEQ ID NO: 3, and hybridizes to the first nucleic acid under high stringency conditions.

The invention also relates to a vector comprising an isolated nucleic acid molecule of the invention operably linked to a regulatory sequence, as well as to a recombinant host cell comprising the vector. The invention also provides a method for preparing a polypeptide encoded by an isolated nucleic acid molecule comprising culturing the recombinant host cell under conditions suitable for expression of said nucleic acid molecule.

Also contemplated by the invention is a method of assaying a sample for the presence of a polypeptide encoded by an isolated nucleic acid molecule of the invention, comprising contacting the sample with an antibody that specifically binds to the polypeptide.

The invention further provides a method of identifying an agent that alters expression of a FLAP nucleic acid, comprising: contacting a solution containing a nucleic acid comprising the promoter region of the FLAP nucleic acid operably linked to a reporter gene with an agent to be tested; assessing the level of expression of the reporter gene; and comparing the level of expression with a level of expression of the reporter gene in the absence of the agent; wherein if the level of expression of the reporter gene in the presence of the agent differs, by an amount that is statistically significant, from the level of expression in the absence of the agent, then the agent is

an agent that alters expression of the FLAP nucleic acid. An agent identified by this method is also contemplated.

The invention additionally comprises a method of identifying an agent that alters expression of a FLAP nucleic acid, in which a solution containing a nucleic acid
5 described herein or a derivative or fragment thereof is contacted with an agent to be tested, and expression of the nucleic acid, derivative or fragment in the presence of the agent is assessed and compared with expression of the nucleic acid, derivative or fragment in the absence of the agent. If expression of the nucleic acid, derivative or fragment in the presence of the agent differs, by an amount that is statistically
10 significant, from the expression in the absence of the agent, then the agent is an agent that alters expression of the FLAP nucleic acid. In certain embodiments, the expression of the nucleic acid, derivative or fragment in the presence of the agent comprises expression of one or more splicing variant(s) that differ in kind or in quantity from the expression of one or more splicing variant(s) the absence of the
15 agent. Agents identified by this method are also contemplated. Representative agents include antisense nucleic acid to a FLAP nucleic acid; a FLAP polypeptide; a FLAP nucleic acid receptor; a FLAP nucleic acid binding agent; a peptidomimetic; a fusion protein; a prodrug thereof; an antibody; and a ribozyme. A method of altering expression of a FLAP nucleic acid comprising contacting a cell containing a FLAP
20 nucleic acid with such an agent is also contemplated.

The invention further pertains to a method of identifying a polypeptide which interacts with a FLAP polypeptide, employing a yeast two-hybrid system that uses a first vector which comprises a nucleic acid encoding a DNA binding domain and a FLAP polypeptide, splicing variant, or a fragment or derivative thereof, and a second
25 vector which comprises a nucleic acid encoding a transcription activation domain and a nucleic acid encoding a test polypeptide. If transcriptional activation occurs in the yeast two-hybrid system, the test polypeptide is a polypeptide which interacts with a FLAP polypeptide.

In a further embodiment, the invention relates to a myocardial infarction
30 therapeutic agent, such as a FLAP nucleic acid or fragment or derivative thereof; a 5-lipoxygenase nucleic acid or fragment or derivative thereof; a leukotriene synthetase

-5-

nucleic acid or fragment or derivative thereof; a polypeptide encoded by a FLAP nucleic acid; a polypeptide encoded by a 5-lipoxygenase nucleic acid; a polypeptide encoded by a leukotriene synthetase nucleic acid; a FLAP receptor; a 5-lipoxygenase receptor; a leukotriene synthetase receptor; a FLAP nucleic acid binding agent; a 5-lipoxygenase binding agent; a leukotriene synthetase binding agent; a FLAP nucleic acid binding agent; a 5-lipoxygenase nucleic acid binding agent; a leukotriene synthetase nucleic acid binding agent; a peptidomimetic; a fusion protein; a prodrug; an antibody; an agent that alters FLAP nucleic acid expression; an agent that alters activity of a polypeptide encoded by a FLAP nucleic acid, a 5-lipoxygenase nucleic acid, or a leukotriene synthetase nucleic acid; an agent that alters posttranscriptional processing of a polypeptide encoded by a FLAP nucleic acid, a 5-lipoxygenase nucleic acid or a leukotriene synthetase nucleic acid; an agent that alters interaction of a FLAP nucleic acid with a FLAP nucleic acid binding agent; an agent that alters interaction of a 5-lipoxygenase nucleic acid with a 5-lipoxygenase nucleic acid binding agent; an agent that alters interaction of a leukotriene synthetase nucleic acid with a leukotriene synthetase nucleic acid binding agent; an agent that alters transcription of splicing variants encoded by a FLAP nucleic acid, a 5-lipoxygenase nucleic acid, or a leukotriene synthetase nucleic acid; or ribozymes; and pharmaceutical compositions comprising at least one myocardial infarction therapeutic agent.

The invention also pertains to a method of treating a disease or condition associated with FLAP in an individual, comprising administering a myocardial infarction therapeutic agent to the individual, in a therapeutically effective amount. In certain embodiments, the myocardial infarction therapeutic agent is a FLAP nucleic acid agonist or a FLAP nucleic acid antagonist.

A transgenic animal comprising a nucleic acid of the invention such as an exogenous FLAP nucleic acid or a nucleic acid encoding a FLAP polypeptide is also contemplated.

In yet another embodiment, the invention relates to a method for assaying a sample for the presence of a FLAP nucleic acid, by contacting the sample with a nucleic acid comprising a contiguous nucleic acid sequence which is at least partially

complementary to a part of the sequence of said FLAP nucleic acid, under conditions appropriate for hybridization, and assessing whether hybridization has occurred between a FLAP nucleic acid and said nucleic acid, wherein if hybridization has occurred, a FLAP nucleic acid is present in the nucleic acid. In certain embodiments, the contiguous nucleic acid sequence is completely complementary to a part of the sequence of said FLAP nucleic acid and in other embodiments; amplification is of at least part of said FLAP nucleic acid.

In certain embodiments, the contiguous nucleic acid sequence is 100 or fewer nucleotides in length and is either: a) at least 80% identical to a contiguous sequence of nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3; b) at least 80% identical to the complement of a contiguous sequence of nucleotides in of SEQ ID NO: 1 or SEQ ID NO: 3; or c) capable of selectively hybridizing to said FLAP nucleic acid.

The invention also pertains to a reagent for assaying a sample for the presence of a FLAP nucleic acid, the reagent comprising a nucleic acid comprising a contiguous nucleic acid sequence which is at least partially complementary to a part of the nucleic acid sequence of said FLAP nucleic acid. The reagent can comprise a contiguous nucleotide sequence which is completely complementary to a part of the nucleic acid sequence of said FLAP nucleic acid. A reagent kit for assaying a sample for the presence of a FLAP nucleic acid is also described, including (*e.g.*, in separate containers), one or more labeled nucleic acids comprising a contiguous nucleic acid sequence which is at least partially complementary to a part of the nucleic acid sequence of said FLAP nucleic acid; and reagents for detection of said label. The labeled nucleic acid can comprise a contiguous nucleotide sequence which is completely complementary to a part of the nucleic acid sequence of said FLAP nucleic acid. Also described herein is a reagent kit for assaying a sample for the presence of a FLAP nucleic acid, comprising one or more nucleic acids comprising a contiguous nucleic acid sequence which is at least partially complementary to a part of the nucleic acid sequence of said FLAP nucleic acid, and which is capable of acting as a primer for said FLAP nucleic acid when maintained under conditions for primer extension.

-7-

The invention also provides for the use of a nucleic acid for assaying a sample for the presence of a FLAP nucleic acid, in which the nucleic acid is 100 or fewer nucleotides in length and is either: at least 80% identical to a contiguous sequence of nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3; at least 80% identical to the
5 complement of a contiguous sequence of nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3; or capable of selectively hybridizing to said FLAP nucleic acid.

In yet another embodiment, the use of a first nucleic acid for assaying a sample for the presence of a FLAP nucleic acid that has at least one nucleotide difference from the first nucleic acid is described, in which the first nucleic acid is
10 100 or fewer nucleotides in length and which is either: at least 80% identical to a contiguous sequence of nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3 or one of the sequences shown in Table 3; at least 80% identical to the complement of a contiguous sequence of nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3 one of the sequences shown in Table 3; or capable of selectively hybridizing to said FLAP nucleic acid.

15 The invention also relates to a method of diagnosing a susceptibility to myocardial infarction in an individual, comprising determining the presence or absence in the individual of certain "haplotypes" (combinations of genetic markers); the presence of the haplotype is diagnostic of susceptibility to myocardial infarction. In one embodiment, a haplotype associated with a susceptibility to myocardial
20 infarction comprises markers DG00AAFIU, SG13S25, DG00AAJFF, DG00AAHII, SG13S32 and SG13S35 at the 13q12 locus. In one particular embodiment, the presence of the alleles T, G, G, G, A and G at DG00AAFIU, SG13S25, DG00AAJFF, DG00AAHII, SG13S32 and SG13S35, respectively (the B6 haplotype), is diagnostic of susceptibility to myocardial infarction. In another embodiment, a haplotype
25 associated with a susceptibility to myocardial infarction comprises markers DG00AAFIU, SG13S25, DG00AAHII, SG13S30 and SG13S42 at the 13q12 locus. In one particular embodiment, the presence of the alleles T, G, G, G and A at DG00AAFIU, SG13S25, DG00AAHII, SG13S30 and SG13S42, respectively (the B5 haplotype), is diagnostic of susceptibility to myocardial infarction. In a third
30 embodiment, a haplotype associated with a susceptibility to myocardial infarction comprises markers SG13S25, DG00AAHII, SG13S30 and SG13S42 at the 13q12

-8-

locus. In one particular embodiment, the presence of the alleles G, G, G and A at SG13S25, DG00AAHII, SG13S30 and SG13S42, respectively (the B4 haplotype), is diagnostic of susceptibility to myocardial infarction. In a fourth embodiment, a haplotype associated with a susceptibility to myocardial infarction comprises markers
5 DG00AAFIU, SG13S25, DG00AAHID, B_SNP_310657 and SG13S32 at the 13q12 locus. In one particular embodiment, the presence of the alleles T, G, T, G and A at DG00AAFIU, SG13S25, DG00AAHID, B_SNP_310657 and SG13S32, respectively (the A5 haplotype), is diagnostic of susceptibility to myocardial infarction. In a fifth embodiment, a haplotype associated with a susceptibility to myocardial infarction
10 comprises markers SG13S25, DG00AAHID, B_SNP_310657 and SG13S32 at the 13q12 locus. In one particular embodiment, the presence of the alleles G, T, G and A at SG13S25, DG00AAHID, B_SNP_310657 and SG13S32, respectively (the A4 haplotype), is diagnostic of susceptibility to myocardial infarction. The presence or absence of the haplotype can be determined by various methods, including, for
15 example, using enzymatic amplification, restriction fragment length polymorphism analysis, sequence analysis or electrophoretic analysis of nucleic acid from the individual.

The invention also relates to a method of diagnosing a susceptibility to myocardial infarction in an individual, comprising: obtaining a nucleic acid sample
20 from said individual; and analyzing the nucleic acid sample for the presence or absence of a haplotype using markers DG00AAFIU, SG13S25, DG00AAJFF, DG00AAHII, DG00AAHID, B_SNP_310657, SG13S30, SG13S32, SG13S42, and SG13S35, with alleles T, G, G, G, T, G, G, A, A, G, respectively, at the 13q12 locus, wherein the presence of the haplotype is diagnostic for a susceptibility to myocardial
25 infarction.

Also described herein is a method of diagnosing myocardial infarction or a susceptibility to myocardial infarction in an individual, comprising determining the presence or absence in the individual of a haplotype comprising one or more markers and/or single nucleotide polymorphisms as shown in Table 3 in the locus on
30 chromosome 13q12 comprising a FLAP nucleic acid, wherein the presence of the

haplotype is diagnostic of myocardial infarction or of a susceptibility to myocardial infarction.

A method for the diagnosis and identification of susceptibility to myocardial infarction in an individual is also described, comprising: screening for an at-risk
5 haplotype in the FLAP nucleic acid that is more frequently present in an individual susceptible to myocardial infarction compared to an individual who is not susceptible to myocardial infarction wherein the at-risk haplotype increases the risk significantly. In certain embodiments, the significant increase is at least about 20%, and in other
10 1.2. embodiments, the significant increase is identified as an odds ratio of at least about

BRIEF DESCRIPTION OF THE DRAWINGS

The foregoing and other objects, features and advantages of the invention will be apparent from the following more particular description of preferred embodiments
15 of the invention.

FIG. 1 shows the multipoint non-parametric LOD scores for a framework marker map on chromosome 13. A LOD score suggestive of linkage of 2.5 was found at marker D13S289. The marker map for chromosome 13 that was used in the linkage analysis is shown in Table 1.

20 FIG. 2 shows LOD score results for the families after adding 14 markers to the candidate region. The inclusion of additional microsatellite markers increased the information on sharing by descent from 0.7 to 0.8, around the markers that gave the highest LOD scores. The marker map used in the second step of linkage analysis is shown in Table 2.

25 FIG. 3A shows the results from a haplotype association analysis using 4 and 5 microsatellite markers. The p -value of the association is plotted on the y-axis and position of markers on the x-axis. Only haplotypes that show association with a p -value $< 10^{-5}$ are shown in the figure. The most significant microsatellite marker haplotype association is found using markers DG13S1103, DG13S166, DG13S1287,
30 DG13S1061 and DG13S301, with alleles 4, 0, 2, 14 and 3, respectively (p -value of 1.02×10^{-7}). Carrier frequency of the haplotype is 7.3% in affected individuals and

-10-

0.3% in controls. These results are based on 437 patients and 721 controls. The area that is common to all the haplotypes shown in the figure includes only one gene, FLAP.

FIG. 3B shows the alleles of the makers defining the most significant
5 microsatellite marker haplotypes. The area defined with a black square is a common area to all the most significantly associated haplotypes. The FLAP nucleic acid is located between makers DG13S166 and D13S1238. Two marker haplotype involving alleles 0 and -2 for markers DG13S166 and S13S1238, respectively, is found in excess in patients. Carrier frequency of this haploype is 27% in patients and 15.4% in
10 controls (p -value 1×10^{-3})

FIG. 4 shows the markers and genes around the FLAP (ALOX5AP) gene.

FIG. 5 shows the relative location of key SNPs and exons of the ALOX5AP/FLAP gene. Haplotype length varies between 33 to 68 kb.

FIGs. 6A-6Y4 show the genomic sequence of the FLAP gene (SEQ ID NO: 1).

15 FIG. 7A shows the amino acid sequence of FLAP (SEQ ID NO:2) and the mRNA of FLAP (SEQ ID NO: 3)

FIGs. 7B-7V show the sequences of the FLAP nucleic acid flanking the SNPs that were identified by sequencing samples from patients (SEQ ID NOs: 398-535).

20 DETAILED DESCRIPTION OF THE INVENTION

Extensive genealogical information has been combined with powerful gene sharing methods to map a locus on chromosome 13q12 that is associated with myocardial infarction. Patients with myocardial infarction and controls were initially genotyped with microsatellite markers with an average spacing between markers of
25 less than 100kb over the 12Mb candidate region. An epidemiological study of a population-based sample of MI patients demonstrated the relative risk for siblings of a female MI patient is significantly higher than the relative risk for siblings of a male proband (1.59 (CI 1.47 - 1.73) vs. 1.35 (CI 1.28 - 1.42)). The gender difference in risk of getting MI (males being more likely to get MI) also suggests somewhat
30 different etiology between males and females, where MI in females might represent a more extreme phenotype. This study stratified the population according to sex to

-11-

determine the genetic causes of MI for males and females. The results of the genome wide search of genes that cause MI in Iceland is described. This linkage analysis resulted in linkage on chromosome 13q12.

Initial haplotype association analysis using 4 or 5 microsatellite markers that
5 extended across the gene and were in excess in patients indicated that FLAP is a susceptibility gene for myocardial infarction. A region that is common to all the microsatellite haplotypes includes only one gene, the FLAP gene.

The FLAP nucleic acid encodes a 5-lipoxygenase activating protein, which, in combination with 5-lipoxygenase (5-LO), is required for leukotriene synthesis.
10 Inhibitors of its function impede translocation of 5-lipoxygenase from the cytoplasm to the cell membrane and inhibit activation of 5-lipoxygenase. One other member of the leukotriene pathway, CysLT2 receptor, maps to chromosome 13q14.2 (53 cM on FIG. 2). The region of this gene shows excess sharing identical by decent (LOD score=1) in female MI patients. This indicates that CysLT2 receptor might also play a
15 role in the pathogenesis of MI.

Mutations and/or polymorphisms within the FLAP nucleic acid show association with the disease and can be used for methods of diagnosis. Furthermore, the FLAP gene and other members of the leukotriene pathway, such as 5-LO, LTA4, LTB4, LTC4, LTD4 and CysLT2, are therapeutic targets for myocardial infarction.
20

NUCLEIC ACIDS OF THE INVENTION

FLAP Nucleic Acids, Portions and Variants

Accordingly, the invention pertains to isolated nucleic acid molecules
25 comprising a human FLAP nucleic acid. The term, "FLAP nucleic acid," as used herein, refers to an isolated nucleic acid molecule encoding FLAP polypeptide. The FLAP nucleic acid molecules of the present invention can be RNA, for example, mRNA, or DNA, such as cDNA and genomic DNA. DNA molecules can be double-stranded or single-stranded; single stranded RNA or DNA can be either the coding, or
30 sense strand or the non-coding, or antisense strand. The nucleic acid molecule can include all or a portion of the coding sequence of the gene or nucleic acid and can

-12-

further comprise additional non-coding sequences such as introns and non-coding 3' and 5' sequences (including regulatory sequences, for example).

For example, a FLAP nucleic acid can consist of SEQ ID NOs: 1 or 3 or the complement thereof, or to a portion or fragment of such an isolated nucleic acid molecule (*e.g.*, cDNA or the nucleic acid) that encodes FLAP polypeptide (*e.g.*, a polypeptide such as SEQ ID NO: 2). In a preferred embodiment, the isolated nucleic acid molecule comprises a nucleic acid molecule selected from the group consisting of SEQ ID NOs: 1 or 3, or their complement thereof.

Additionally, the nucleic acid molecules of the invention can be fused to a marker sequence, for example, a sequence that encodes a polypeptide to assist in isolation or purification of the polypeptide. Such sequences include, but are not limited to, those that encode a glutathione-S-transferase (GST) fusion protein and those that encode a hemagglutinin A (HA) polypeptide marker from influenza.

An "isolated" nucleic acid molecule, as used herein, is one that is separated from nucleic acids that normally flank the gene or nucleic acid sequence (as in genomic sequences) and/or has been completely or partially purified from other transcribed sequences (*e.g.*, as in an RNA library). For example, an isolated nucleic acid of the invention may be substantially isolated with respect to the complex cellular milieu in which it naturally occurs, or culture medium when produced by recombinant techniques, or chemical precursors or other chemicals when chemically synthesized. In some instances, the isolated material will form part of a composition (for example, a crude extract containing other substances), buffer system or reagent mix. In other circumstances, the material may be purified to essential homogeneity, for example as determined by PAGE or column chromatography such as HPLC. In certain embodiments, an isolated nucleic acid molecule comprises at least about 50, 80 or 90% (on a molar basis) of all macromolecular species present. With regard to genomic DNA, the term "isolated" also can refer to nucleic acid molecules that are separated from the chromosome with which the genomic DNA is naturally associated. For example, the isolated nucleic acid molecule can contain less than about 5 kb, including but not limited to 4 kb, 3 kb, 2 kb, 1 kb, 0.5 kb or 0.1 kb of nucleotides

-13-

which flank the nucleic acid molecule in the genomic DNA of the cell from which the nucleic acid molecule is derived.

The nucleic acid molecule can be fused to other coding or regulatory sequences and still be considered isolated. Thus, recombinant DNA contained in a
5 vector is included in the definition of "isolated" as used herein. Also, isolated nucleic acid molecules include recombinant DNA molecules in heterologous host cells, as well as partially or substantially purified DNA molecules in solution. "Isolated" nucleic acid molecules also encompass *in vivo* and *in vitro* RNA transcripts of the DNA molecules of the present invention. An isolated nucleic acid molecule or
10 nucleic acid sequence can include a nucleic acid molecule or nucleic acid sequence that is synthesized chemically or by recombinant means. Therefore, recombinant DNA contained in a vector is included in the definition of "isolated" as used herein. Also, isolated nucleotide sequences include recombinant DNA molecules in heterologous organisms, as well as partially or substantially purified DNA molecules in solution.
15 *In vivo* and *in vitro* RNA transcripts of the DNA molecules of the present invention are also encompassed by "isolated" nucleotide sequences. Such isolated nucleotide sequences are useful in the manufacture of the encoded polypeptide, as probes for isolating homologous sequences (*e.g.*, from other mammalian species), for gene mapping (*e.g.*, by *in situ* hybridization with chromosomes), or for detecting
20 expression of the nucleic acid in tissue (*e.g.*, human tissue), such as by Northern blot analysis.

The present invention also pertains to nucleic acid molecules which are not necessarily found in nature but which encode a FLAP polypeptide (*e.g.*, a polypeptide having an amino acid sequence comprising an amino acid sequence of SEQ ID NOs:
25 2), or another splicing variant of a FLAP polypeptide or polymorphic variant thereof. Thus, for example, DNA molecules that comprise a sequence that is different from the naturally occurring nucleic acid sequence but which, due to the degeneracy of the genetic code, encode a FLAP polypeptide of the present invention are also the subjects of this invention. The invention also encompasses nucleotide sequences
30 encoding portions (fragments), or encoding variant polypeptides such as analogues or derivatives of a FLAP polypeptide. Such variants can be naturally occurring, such as

in the case of allelic variation or single nucleotide polymorphisms, or non-naturally-occurring, such as those induced by various mutagens and mutagenic processes. Intended variations include, but are not limited to, addition, deletion and substitution of one or more nucleotides that can result in conservative or non-conservative amino acid changes, including additions and deletions. Preferably the nucleotide (and/or resultant amino acid) changes are silent or conserved; that is, they do not alter the characteristics or activity of a FLAP polypeptide. In one preferred embodiment, the nucleotide sequences are fragments that comprise one or more polymorphic microsatellite markers. In another preferred embodiment, the nucleotide sequences are fragments that comprise one or more single nucleotide polymorphisms in a FLAP nucleic acid (*e.g.*, the single nucleotide polymorphisms set forth in Table 3, below).

Other alterations of the nucleic acid molecules of the invention can include, for example, labeling, methylation, internucleotide modifications such as uncharged linkages (*e.g.*, methyl phosphonates, phosphotriesters, phosphoramidates, carbamates), charged linkages (*e.g.*, phosphorothioates, phosphorodithioates), pendent moieties (*e.g.*, polypeptides), intercalators (*e.g.*, acridine, psoralen), chelators, alkylators, and modified linkages (*e.g.*, alpha anomeric nucleic acids). Also included are synthetic molecules that mimic nucleic acid molecules in the ability to bind to a designated sequence via hydrogen bonding and other chemical interactions. Such molecules include, for example, those in which peptide linkages substitute for phosphate linkages in the backbone of the molecule.

The invention also pertains to nucleic acid molecules that hybridize under high stringency hybridization conditions, such as for selective hybridization, to a nucleic acid sequence described herein (*e.g.*, nucleic acid molecules which specifically hybridize to a nucleic acid sequence encoding polypeptides described herein, and, optionally, have an activity of the polypeptide). In one embodiment, the invention includes variants described herein which hybridize under high stringency hybridization conditions (*e.g.*, for selective hybridization) to a nucleic acid sequence comprising a nucleic acid sequence selected from the group consisting of SEQ ID NOs: 1 or 3 or the complement thereof. In another embodiment, the invention includes variants described herein which hybridize under high stringency

hybridization conditions (*e.g.*, for selective hybridization) to a nucleic acid sequence encoding an amino acid sequence of SEQ ID NO: 2 or a polymorphic variant thereof. In a preferred embodiment, the variant that hybridizes under high stringency hybridizations has an activity of a FLAP.

5 Such nucleic acid molecules can be detected and/or isolated by specific hybridization (*e.g.*, under high stringency conditions). "Specific hybridization," as used herein, refers to the ability of a first nucleic acid to hybridize to a second nucleic acid in a manner such that the first nucleic acid does not hybridize to any nucleic acid other than to the second nucleic acid (*e.g.*, when the first nucleic acid has a higher
10 similarity to the second nucleic acid than to any other nucleic acid in a sample wherein the hybridization is to be performed). "Stringency conditions" for hybridization is a term of art which refers to the incubation and wash conditions, *e.g.*, conditions of temperature and buffer concentration, which permit hybridization of a particular nucleic acid to a second nucleic acid; the first nucleic acid may be perfectly
15 (*i.e.*, 100%) complementary to the second, or the first and second may share some degree of complementarity that is less than perfect (*e.g.*, 70%, 75%, 85%, 95%). For example, certain high stringency conditions can be used which distinguish perfectly complementary nucleic acids from those of less complementarity. "High stringency conditions", "moderate stringency conditions" and "low stringency conditions" for
20 nucleic acid hybridizations are explained on pages 2.10.1-2.10.16 and pages 6.3.1-6.3.6 in *Current Protocols in Molecular Biology* (Ausubel, F.M. *et al.*, "*Current Protocols in Molecular Biology*", John Wiley & Sons, (1998), the entire teachings of which are incorporated by reference herein). The exact conditions which determine the stringency of hybridization depend not only on ionic strength (*e.g.*, 0.2X SSC,
25 0.1X SSC), temperature (*e.g.*, room temperature, 42°C, 68°C) and the concentration of destabilizing agents such as formamide or denaturing agents such as SDS, but also on factors such as the length of the nucleic acid sequence, base composition, percent mismatch between hybridizing sequences and the frequency of occurrence of subsets of that sequence within other non-identical sequences. Thus, equivalent conditions
30 can be determined by varying one or more of these parameters while maintaining a similar degree of identity or similarity between the two nucleic acid molecules.

Typically, conditions are used such that sequences at least about 60%, at least about 70%, at least about 80%, at least about 90% or at least about 95% or more identical to each other remain hybridized to one another. By varying hybridization conditions from a level of stringency at which no hybridization occurs to a level at which
5 hybridization is first observed, conditions which will allow a given sequence to hybridize (*e.g.*, selectively) with the most similar sequences in the sample can be determined.

Exemplary conditions are described in Krause, M.H. and S.A. Aaronson, *Methods in Enzymology* 200: 546-556 (1991), and in, Ausubel, *et al.*, "*Current*
10 *Protocols in Molecular Biology*", John Wiley & Sons, (1998), which describes the determination of washing conditions for moderate or low stringency conditions. Washing is the step in which conditions are usually set so as to determine a minimum level of complementarity of the hybrids. Generally, starting from the lowest temperature at which only homologous hybridization occurs, each °C by which the
15 final wash temperature is reduced (holding SSC concentration constant) allows an increase by 1% in the maximum extent of mismatching among the sequences that hybridize. Generally, doubling the concentration of SSC results in an increase in T_m of -17°C. Using these guidelines, the washing temperature can be determined empirically for high, moderate or low stringency, depending on the level of mismatch
20 sought.

For example, a low stringency wash can comprise washing in a solution containing 0.2X SSC/0.1% SDS for 10 minutes at room temperature; a moderate stringency wash can comprise washing in a prewarmed solution (42°C) solution containing 0.2X SSC/0.1% SDS for 15 minutes at 42°C; and a high stringency wash
25 can comprise washing in prewarmed (68°C) solution containing 0.1X SSC/0.1%SDS for 15 minutes at 68°C. Furthermore, washes can be performed repeatedly or sequentially to obtain a desired result as known in the art. Equivalent conditions can be determined by varying one or more of the parameters given as an example, as known in the art, while maintaining a similar degree of identity or similarity between
30 the target nucleic acid molecule and the primer or probe used.

-17-

The percent homology or identity of two nucleotide or amino acid sequences can be determined by aligning the sequences for optimal comparison purposes (*e.g.*, gaps can be introduced in the sequence of a first sequence for optimal alignment).

The nucleotides or amino acids at corresponding positions are then compared, and the
5 percent identity between the two sequences is a function of the number of identical positions shared by the sequences (*i.e.*, % identity = # of identical positions/total # of positions x 100). When a position in one sequence is occupied by the same nucleotide or amino acid residue as the corresponding position in the other sequence, then the molecules are homologous at that position. As used herein, nucleic acid or amino
10 acid "homology" is equivalent to nucleic acid or amino acid "identity". In certain embodiments, the length of a sequence aligned for comparison purposes is at least 30%, for example, at least 40%, in certain embodiments at least 60%, and in other embodiments at least 70%, 80%, 90% or 95% of the length of the reference sequence. The actual comparison of the two sequences can be accomplished by well-known
15 methods, for example, using a mathematical algorithm. A preferred, non-limiting example of such a mathematical algorithm is described in Karlin *et al.*, *Proc. Natl. Acad. Sci. USA* 90:5873-5877 (1993). Such an algorithm is incorporated into the NBLAST and XBLAST programs (version 2.0) as described in Altschul *et al.*, *Nucleic Acids Res.* 25:389-3402 (1997). When utilizing BLAST and Gapped BLAST
20 programs, the default parameters of the respective programs (*e.g.*, NBLAST) can be used. In one embodiment, parameters for sequence comparison can be set at score=100, wordlength=12, or can be varied (*e.g.*, W=5 or W=20).

Another preferred, non-limiting example of a mathematical algorithm utilized for the comparison of sequences is the algorithm of Myers and Miller, *CABIOS* 4(1):
25 11-17 (1988). Such an algorithm is incorporated into the ALIGN program (version 2.0) which is part of the GCG sequence alignment software package (Accelrys, Cambridge, UK). When utilizing the ALIGN program for comparing amino acid sequences, a PAM120 weight residue table, a gap length penalty of 12, and a gap penalty of 4 can be used. Additional algorithms for sequence analysis are known in
30 the art and include ADVANCE and ADAM as described in Torellis and Robotti,

Comput. Appl. Biosci. 10:3-5 (1994); and FASTA described in Pearson and Lipman, *Proc. Natl. Acad. Sci. USA* 85:2444-8 (1988).

In another embodiment, the percent identity between two amino acid sequences can be accomplished using the GAP program in the GCG software package using either a BLOSUM63 matrix or a PAM250 matrix, and a gap weight of 12, 10, 8, 6, or 4 and a length weight of 2, 3, or 4. In yet another embodiment, the percent identity between two nucleic acid sequences can be accomplished using the GAP program in the GCG software package using a gap weight of 50 and a length weight of 3.

10 The present invention also provides isolated nucleic acid molecules that contain a fragment or portion that hybridizes under highly stringent conditions to a nucleic acid sequence comprising SEQ ID NO: 1 or 3 or the complement of SEQ ID NO: 1 or 3, and also provides isolated nucleic acid molecules that contain a fragment or portion that hybridizes under highly stringent conditions to a nucleic acid sequence
15 encoding an amino acid sequence of the invention or polymorphic variant thereof. The nucleic acid fragments of the invention are at least about 15, for example, at least about 18, 20, 23 or 25 nucleotides, and can be 30, 40, 50, 100, 200 or more nucleotides in length. Longer fragments, for example, 30 or more nucleotides in length, encoding antigenic polypeptides described herein are particularly useful, such
20 as for the generation of antibodies as described below.

Probes and Primers

In a related aspect, the nucleic acid fragments of the invention are used as probes or primers in assays such as those described herein. "Probes" or "primers" are
25 oligonucleotides that hybridize in a base-specific manner to a complementary strand of nucleic acid molecules. Such probes and primers include polypeptide nucleic acids, as described in Nielsen *et al.* (*Science* 254:1497-1500 (1991)).

A probe or primer comprises a region of nucleic acid that hybridizes to at least about 15, for example about 20-25, and in certain embodiments about 40, 50 or 75,
30 consecutive nucleotides of a nucleic acid of the invention, such as a nucleic acid comprising a contiguous nucleic acid sequence of SEQ ID NOs: 1 or 3 or the

complement of SEQ ID Nos: 1 or 3, or a nucleic acid sequence encoding an amino acid sequence of SEQ ID NO: 2 or polymorphic variant thereof. In preferred embodiments, a probe or primer comprises 100 or fewer nucleotides, in certain embodiments, from 6 to 50 nucleotides, for example, from 12 to 30 nucleotides. In
5 other embodiments, the probe or primer is at least 70% identical to the contiguous nucleic acid sequence or to the complement of the contiguous nucleotide sequence, for example, at least 80% identical, in certain embodiments at least 90% identical, and in other embodiments at least 95% identical, or even capable of selectively hybridizing to the contiguous nucleic acid sequence or to the complement of the
10 contiguous nucleotide sequence. Often, the probe or primer further comprises a label, e.g., radioisotope, fluorescent compound, enzyme, or enzyme co-factor.

The nucleic acid molecules of the invention such as those described above can be identified and isolated using standard molecular biology techniques and the sequence information provided herein. For example, nucleic acid molecules can be
15 amplified and isolated using the polymerase chain reaction and synthetic oligonucleotide primers based on one or more of SEQ ID NOs: 1 or 3, or the complement thereof, or designed based on nucleotides based on sequences encoding one or more of the amino acid sequences provided herein. See generally *PCR Technology: Principles and Applications for DNA Amplification* (ed. H.A. Erlich,
20 Freeman Press, NY, NY, 1992); *PCR Protocols: A Guide to Methods and Applications* (Eds. Innis *et al.*, Academic Press, San Diego, CA, 1990); Mattila *et al.*, *Nucl. Acids Res.* 19:4967 (1991); Eckert *et al.*, *PCR Methods and Applications* 1:17 (1991); PCR (eds. McPherson *et al.*, IRL Press, Oxford); and U.S. Patent 4,683,202. The nucleic acid molecules can be amplified using cDNA, mRNA or genomic DNA
25 as a template, cloned into an appropriate vector and characterized by DNA sequence analysis.

Other suitable amplification methods include the ligase chain reaction (LCR) (see Wu and Wallace, *Genomics* 4:560 (1989), Landegren *et al.*, *Science* 241:1077 (1988), transcription amplification (Kwoh *et al.*, *Proc. Natl. Acad. Sci. USA* 86:1173
30 (1989)), and self-sustained sequence replication (Guatelli *et al.*, *Proc. Nat. Acad. Sci. USA* 87:1874 (1990)) and nucleic acid based sequence amplification (NASBA). The

latter two amplification methods involve isothermal reactions based on isothermal transcription, which produce both single stranded RNA (ssRNA) and double stranded DNA (dsDNA) as the amplification products in a ratio of about 30 or 100 to 1, respectively.

5 The amplified DNA can be labeled, for example, radiolabeled, and used as a probe for screening a cDNA library derived from human cells, mRNA in zap express, ZIPLOX or other suitable vector. Corresponding clones can be isolated, DNA can obtained following *in vivo* excision, and the cloned insert can be sequenced in either or both orientations by art recognized methods to identify the correct reading frame
10 encoding a polypeptide of the appropriate molecular weight. For example, the direct analysis of the nucleic acid molecules of the present invention can be accomplished using well-known methods that are commercially available. See, for example, Sambrook *et al.*, *Molecular Cloning, A Laboratory Manual* (2nd Ed., CSHP, New York 1989); Zyskind *et al.*, *Recombinant DNA Laboratory Manual*, (Acad. Press,
15 1988)). Using these or similar methods, the polypeptide and the DNA encoding the polypeptide can be isolated, sequenced and further characterized.

Antisense nucleic acid molecules of the invention can be designed using the nucleotide sequences of SEQ ID NOs: 1 or 3 and/or the complement of one or more of SEQ ID NOs: 1 or 3 and/or a portion of one or more of SEQ ID NOs: 1 or 3 or the
20 complement of one or more of SEQ ID NOs: 1 or 3 and/or a sequence encoding the amino acid sequences of SEQ ID NOs: 2 or encoding a portion of one or more of SEQ ID NOs: 1 or 3 or their complement. They can be constructed using chemical synthesis and enzymatic ligation reactions using procedures known in the art. For example, an antisense nucleic acid molecule (*e.g.*, an antisense oligonucleotide) can
25 be chemically synthesized using naturally occurring nucleotides or variously modified nucleotides designed to increase the biological stability of the molecules or to increase the physical stability of the duplex formed between the antisense and sense nucleic acids, *e.g.*, phosphorothioate derivatives and acridine substituted nucleotides can be used. Alternatively, the antisense nucleic acid molecule can be produced biologically
30 using an expression vector into which a nucleic acid molecule has been subcloned in

-21-

an antisense orientation (*i.e.*, RNA transcribed from the inserted nucleic acid molecule will be of an antisense orientation to a target nucleic acid of interest).

The nucleic acid sequences can also be used to compare with endogenous DNA sequences in patients to identify one or more of the disorders related to FLAP, and as probes, such as to hybridize and discover related DNA sequences or to subtract out known sequences from a sample. The nucleic acid sequences can further be used to derive primers for genetic fingerprinting, to raise anti-polypeptide antibodies using DNA immunization techniques, and as an antigen to raise anti-DNA antibodies or elicit immune responses. Portions or fragments of the nucleotide sequences identified herein (and the corresponding complete gene sequences) can be used in numerous ways as polynucleotide reagents. For example, these sequences can be used to: (i) map their respective genes on a chromosome; and, thus, locate gene regions or nucleic acid regions associated with genetic disease; (ii) identify an individual from a minute biological sample (tissue typing); and (iii) aid in forensic identification of a biological sample. Additionally, the nucleotide sequences of the invention can be used to identify and express recombinant polypeptides for analysis, characterization or therapeutic use, or as markers for tissues in which the corresponding polypeptide is expressed, either constitutively, during tissue differentiation, or in diseased states. The nucleic acid sequences can additionally be used as reagents in the screening and/or diagnostic assays described herein, and can also be included as components of kits (*e.g.*, reagent kits) for use in the screening and/or diagnostic assays described herein.

Vectors

Another aspect of the invention pertains to nucleic acid constructs containing a nucleic acid molecule of SEQ ID NOs: 1 or 3 or the complement thereof (or a portion thereof). Yet another aspect of the invention pertains to nucleic acid constructs containing a nucleic acid molecule encoding an amino acid of SEQ ID NO: 2 or polymorphic variant thereof. The constructs comprise a vector (*e.g.*, an expression vector) into which a sequence of the invention has been inserted in a sense or antisense orientation. As used herein, the term “vector” refers to a nucleic acid

-22-

molecule capable of transporting another nucleic acid to which it has been linked. One type of vector is a "plasmid", which refers to a circular double stranded DNA loop into which additional DNA segments can be ligated. Another type of vector is a viral vector, wherein additional DNA segments can be ligated into the viral genome.

5 Certain vectors are capable of autonomous replication in a host cell into which they are introduced (*e.g.*, bacterial vectors having a bacterial origin of replication and episomal mammalian vectors). Other vectors (*e.g.*, non-episomal mammalian vectors) are integrated into the genome of a host cell upon introduction into the host cell, and thereby are replicated along with the host genome. Moreover, certain

10 vectors, such as expression vectors, are capable of directing the expression of genes or nucleic acids to which they are operably linked. In general, expression vectors of utility in recombinant DNA techniques are often in the form of plasmids. However, the invention is intended to include such other forms of expression vectors, such as viral vectors (*e.g.*, replication defective retroviruses, adenoviruses and adeno-

15 associated viruses) that serve equivalent functions.

Preferred recombinant expression vectors of the invention comprise a nucleic acid molecule of the invention in a form suitable for expression of the nucleic acid molecule in a host cell. This means that the recombinant expression vectors include one or more regulatory sequences, selected on the basis of the host cells to be used for

20 expression, which is operably linked to the nucleic acid sequence to be expressed. Within a recombinant expression vector, "operably linked" or "operatively linked" is intended to mean that the nucleic acid sequence of interest is linked to the regulatory sequence(s) in a manner which allows for expression of the nucleic acid sequence (*e.g.*, in an *in vitro* transcription/translation system or in a host cell when the vector is

25 introduced into the host cell). The term "regulatory sequence" is intended to include promoters, enhancers and other expression control elements (*e.g.*, polyadenylation signals). Such regulatory sequences are described, for example, in Goeddel, "Gene Expression Technology", *Methods in Enzymology* 185, Academic Press, San Diego, CA (1990). Regulatory sequences include those which direct constitutive expression

30 of a nucleic acid sequence in many types of host cell and those which direct expression of the nucleic acid sequence only in certain host cells (*e.g.*, tissue-specific

regulatory sequences). It will be appreciated by those skilled in the art that the design of the expression vector can depend on such factors as the choice of the host cell to be transformed and the level of expression of polypeptide desired. The expression vectors of the invention can be introduced into host cells to thereby produce
5 polypeptides, including fusion polypeptides, encoded by nucleic acid molecules as described herein.

The recombinant expression vectors of the invention can be designed for expression of a polypeptide of the invention in prokaryotic or eukaryotic cells, *e.g.*, bacterial cells such as *E. coli*, insect cells (using baculovirus expression vectors),
10 yeast cells or mammalian cells. Suitable host cells are discussed further in Goeddel, *supra*. Alternatively, the recombinant expression vector can be transcribed and translated *in vitro*, for example using T7 promoter regulatory sequences and T7 polymerase.

Another aspect of the invention pertains to host cells into which a recombinant
15 expression vector of the invention has been introduced. The terms "host cell" and "recombinant host cell" are used interchangeably herein. It is understood that such terms refer not only to the particular subject cell but also to the progeny or potential progeny of such a cell. Because certain modifications may occur in succeeding generations due to either mutation or environmental influences, such progeny may
20 not, in fact, be identical to the parent cell, but are still included within the scope of the term as used herein.

A host cell can be any prokaryotic or eukaryotic cell. For example, a nucleic acid molecule of the invention can be expressed in bacterial cells (*e.g.*, *E. coli*), insect cells, yeast or mammalian cells (such as Chinese hamster ovary cells (CHO) or COS
25 cells). Other suitable host cells are known to those skilled in the art.

Vector DNA can be introduced into prokaryotic or eukaryotic cells via conventional transformation or transfection techniques. As used herein, the terms "transformation" and "transfection" are intended to refer to a variety of art-recognized techniques for introducing a foreign nucleic acid molecule (*e.g.*, DNA) into a host
30 cell, including calcium phosphate or calcium chloride co-precipitation, DEAE-dextran-mediated transfection, lipofection, or electroporation. Suitable methods for

transforming or transfecting host cells can be found in Sambrook, *et al. (supra)*, and other laboratory manuals.

For stable transfection of mammalian cells, it is known that, depending upon the expression vector and transfection technique used, only a small fraction of cells
5 may integrate the foreign DNA into their genome. In order to identify and select these integrants, a gene or nucleic acid that encodes a selectable marker (*e.g.*, for resistance to antibiotics) is generally introduced into the host cells along with the gene or nucleic acid of interest. Preferred selectable markers include those that confer resistance to drugs, such as G418, hygromycin and methotrexate. Nucleic acid
10 molecules encoding a selectable marker can be introduced into a host cell on the same vector as the nucleic acid molecule of the invention or can be introduced on a separate vector. Cells stably transfected with the introduced nucleic acid molecule can be identified by drug selection (*e.g.*, cells that have incorporated the selectable marker gene or nucleic acid will survive, while the other cells die).

15 A host cell of the invention, such as a prokaryotic host cell or eukaryotic host cell in culture can be used to produce (*i.e.*, express) a polypeptide of the invention. Accordingly, the invention further provides methods for producing a polypeptide using the host cells of the invention. In one embodiment, the method comprises culturing the host cell of invention (into which a recombinant expression vector
20 encoding a polypeptide of the invention has been introduced) in a suitable medium such that the polypeptide is produced. In another embodiment, the method further comprises isolating the polypeptide from the medium or the host cell.

The host cells of the invention can also be used to produce nonhuman transgenic animals. For example, in one embodiment, a host cell of the invention is a
25 fertilized oocyte or an embryonic stem cell into which a nucleic acid molecule of the invention has been introduced (*e.g.*, an exogenous FLAP nucleic acid, or an exogenous nucleic acid encoding a FLAP polypeptide). Such host cells can then be used to create non-human transgenic animals in which exogenous nucleotide sequences have been introduced into the genome or homologous recombinant animals
30 in which endogenous nucleotide sequences have been altered. Such animals are useful for studying the function and/or activity of the nucleic acid sequence and

-25-

polypeptide encoded by the sequence and for identifying and/or evaluating modulators of their activity. As used herein, a “transgenic animal” is a non-human animal, preferably a mammal, more preferably a rodent such as a rat or mouse, in which one or more of the cells of the animal include a transgene. Other examples of
5 transgenic animals include non-human primates, sheep, dogs, cows, goats, chickens and amphibians. A transgene is exogenous DNA which is integrated into the genome of a cell from which a transgenic animal develops and which remains in the genome of the mature animal, thereby directing the expression of an encoded gene product in one or more cell types or tissues of the transgenic animal. As used herein, an
10 “homologous recombinant animal” is a non-human animal, preferably a mammal, more preferably a mouse, in which an endogenous gene has been altered by homologous recombination between the endogenous gene and an exogenous DNA molecule introduced into a cell of the animal, *e.g.*, an embryonic cell of the animal, prior to development of the animal.

15 Methods for generating transgenic animals via embryo manipulation and microinjection, particularly animals such as mice, have become conventional in the art and are described, for example, in U.S. Patent Nos. 4,736,866 and 4,870,009, U.S. Pat. No. 4,873,191 and in Hogan, *Manipulating the Mouse Embryo* (Cold Spring Harbor Laboratory Press, Cold Spring Harbor, N.Y., 1986). Methods for constructing
20 homologous recombination vectors and homologous recombinant animals are described further in Bradley, *Current Opinion in BioTechnology* 2:823-829 (1991) and in PCT Publication Nos. WO 90/11354, WO 91/01140, WO 92/0968, and WO 93/04169. Clones of the non-human transgenic animals described herein can also be produced according to the methods described in Wilmut *et al.*, *Nature* 385:810-813
25 (1997) and PCT Publication Nos. WO 97/07668 and WO 97/07669.

POLYPEPTIDES OF THE INVENTION

The present invention also pertains to isolated polypeptides encoded by FLAP nucleic acids (“FLAP polypeptides”), and fragments and variants thereof, as well as
30 polypeptides encoded by nucleotide sequences described herein (*e.g.*, other splicing variants). The term “polypeptide” refers to a polymer of amino acids, and not to a

-26-

specific length; thus, peptides, oligopeptides and proteins are included within the definition of a polypeptide. As used herein, a polypeptide is said to be “isolated” or “purified” when it is substantially free of cellular material when it is isolated from recombinant and non-recombinant cells, or free of chemical precursors or other chemicals when it is chemically synthesized. A polypeptide, however, can be joined to another polypeptide with which it is not normally associated in a cell (*e.g.*, in a “fusion protein”) and still be “isolated” or “purified.”

The polypeptides of the invention can be purified to homogeneity. It is understood, however, that preparations in which the polypeptide is not purified to homogeneity are useful. The critical feature is that the preparation allows for the desired function of the polypeptide, even in the presence of considerable amounts of other components. Thus, the invention encompasses various degrees of purity. In one embodiment, the language “substantially free of cellular material” includes preparations of the polypeptide having less than about 30% (by dry weight) other proteins (*i.e.*, contaminating protein), less than about 20% other proteins, less than about 10% other proteins, or less than about 5% other proteins.

When a polypeptide is recombinantly produced, it can also be substantially free of culture medium, *i.e.*, culture medium represents less than about 20%, less than about 10%, or less than about 5% of the volume of the polypeptide preparation. The language “substantially free of chemical precursors or other chemicals” includes preparations of the polypeptide in which it is separated from chemical precursors or other chemicals that are involved in its synthesis. In one embodiment, the language “substantially free of chemical precursors or other chemicals” includes preparations of the polypeptide having less than about 30% (by dry weight) chemical precursors or other chemicals, less than about 20% chemical precursors or other chemicals, less than about 10% chemical precursors or other chemicals, or less than about 5% chemical precursors or other chemicals.

In one embodiment, a polypeptide of the invention comprises an amino acid sequence encoded by a nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of SEQ ID NO: 1 or 3, or the complement of SEQ ID NO: 1 or 3, or portions thereof, or a portion or polymorphic variant thereof.

-27-

However, the polypeptides of the invention also encompass fragment and sequence variants. Variants include a substantially homologous polypeptide encoded by the same genetic locus in an organism, *i.e.*, an allelic variant, as well as other splicing variants. Variants also encompass polypeptides derived from other genetic loci in an
5 organism, but having substantial homology to a polypeptide encoded by a nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of SEQ ID NOs: 1 or 3 or their complement, or portions thereof, or having substantial homology to a polypeptide encoded by a nucleic acid molecule comprising a nucleic acid sequence selected from the group consisting of nucleotide sequences encoding
10 SEQ ID NO: 2 or polymorphic variants thereof. Variants also include polypeptides substantially homologous or identical to these polypeptides but derived from another organism, *i.e.*, an ortholog. Variants also include polypeptides that are substantially homologous or identical to these polypeptides that are produced by chemical synthesis. Variants also include polypeptides that are substantially homologous or
15 identical to these polypeptides that are produced by recombinant methods.

As used herein, two polypeptides (or a region of the polypeptides) are substantially homologous or identical when the amino acid sequences are at least about 45-55%, in certain embodiments at least about 70-75%, and in other embodiments at least about 80-85%, and in others greater than about 90% or more
20 homologous or identical. A substantially homologous amino acid sequence, according to the present invention, will be encoded by a nucleic acid molecule hybridizing to SEQ ID NO: 1 or 3 or portion thereof, under stringent conditions as more particularly described above, or will be encoded by a nucleic acid molecule hybridizing to a nucleic acid sequence encoding SEQ ID NO: 2 or a portion thereof or
25 polymorphic variant thereof, under stringent conditions as more particularly described thereof.

The invention also encompasses polypeptides having a lower degree of identity but having sufficient similarity so as to perform one or more of the same functions performed by a polypeptide encoded by a nucleic acid molecule of the
30 invention. Similarity is determined by conserved amino acid substitution. Such substitutions are those that substitute a given amino acid in a polypeptide by another

-28-

amino acid of like characteristics. Conservative substitutions are likely to be phenotypically silent. Typically seen as conservative substitutions are the replacements, one for another, among the aliphatic amino acids Ala, Val, Leu and Ile; interchange of the hydroxyl residues Ser and Thr, exchange of the acidic residues Asp
5 and Glu, substitution between the amide residues Asn and Gln, exchange of the basic residues Lys and Arg and replacements among the aromatic residues Phe and Tyr. Guidance concerning which amino acid changes are likely to be phenotypically silent are found in Bowie *et al.*, *Science* 247:1306-1310 (1990).

A variant polypeptide can differ in amino acid sequence by one or more
10 substitutions, deletions, insertions, inversions, fusions, and truncations or a combination of any of these. Further, variant polypeptides can be fully functional or can lack function in one or more activities. Fully functional variants typically contain only conservative variation or variation in non-critical residues or in non-critical regions. Functional variants can also contain substitution of similar amino acids that
15 result in no change or an insignificant change in function. Alternatively, such substitutions may positively or negatively affect function to some degree. Non-functional variants typically contain one or more non-conservative amino acid substitutions, deletions, insertions, inversions, or truncation or a substitution, insertion, inversion, or deletion in a critical residue or critical region.

20 Amino acids that are essential for function can be identified by methods known in the art, such as site-directed mutagenesis or alanine-scanning mutagenesis (Cunningham *et al.*, *Science* 244:1081-1085 (1989)). The latter procedure introduces single alanine mutations at every residue in the molecule. The resulting mutant molecules are then tested for biological activity *in vitro*, or *in vitro* proliferative
25 activity. Sites that are critical for polypeptide activity can also be determined by structural analysis such as crystallization, nuclear magnetic resonance or photoaffinity labeling (Smith *et al.*, *J. Mol. Biol.* 224:899-904 (1992); de Vos *et al.*, *Science* 255:306-312 (1992)).

The invention also includes fragments of the polypeptides of the invention.
30 Fragments can be derived from a polypeptide encoded by a nucleic acid molecule comprising SEQ ID NO: 1 or 3, or the complement of SEQ ID NO: 1 or 3 (or other

-29-

variants). However, the invention also encompasses fragments of the variants of the polypeptides described herein. As used herein, a fragment comprises at least 6 contiguous amino acids. Useful fragments include those that retain one or more of the biological activities of the polypeptide as well as fragments that can be used as an
5 immunogen to generate polypeptide-specific antibodies.

Biologically active fragments (peptides which are, for example, 6, 9, 12, 15, 16, 20, 30, 35, 36, 37, 38, 39, 40, 50, 100 or more amino acids in length) can comprise a domain, segment, or motif that has been identified by analysis of the polypeptide sequence using well-known methods, *e.g.*, signal peptides, extracellular domains, one
10 or more transmembrane segments or loops, ligand binding regions, zinc finger domains, DNA binding domains, acylation sites, glycosylation sites, or phosphorylation sites.

Fragments can be discrete (not fused to other amino acids or polypeptides) or can be within a larger polypeptide. Further, several fragments can be comprised
15 within a single larger polypeptide. In one embodiment a fragment designed for expression in a host can have heterologous pre- and pro-polypeptide regions fused to the amino terminus of the polypeptide fragment and an additional region fused to the carboxyl terminus of the fragment.

The invention thus provides chimeric or fusion polypeptides. These comprise
20 a polypeptide of the invention operatively linked to a heterologous protein or polypeptide having an amino acid sequence not substantially homologous to the polypeptide. "Operatively linked" indicates that the polypeptide and the heterologous protein are fused in-frame. The heterologous protein can be fused to the N-terminus or C-terminus of the polypeptide. In one embodiment the fusion polypeptide does not
25 affect function of the polypeptide *per se*. For example, the fusion polypeptide can be a GST-fusion polypeptide in which the polypeptide sequences are fused to the C-terminus of the GST sequences. Other types of fusion polypeptides include, but are not limited to, enzymatic fusion polypeptides, for example beta-galactosidase fusions, yeast two-hybrid GAL fusions, poly-His fusions and Ig fusions. Such fusion
30 polypeptides, particularly poly-His fusions, can facilitate the purification of recombinant polypeptide. In certain host cells (*e.g.*, mammalian host cells),

-30-

expression and/or secretion of a polypeptide can be increased using a heterologous signal sequence. Therefore, in another embodiment, the fusion polypeptide contains a heterologous signal sequence at its N-terminus.

EP-A-O 464 533 discloses fusion proteins comprising various portions of
5 immunoglobulin constant regions. The Fc is useful in therapy and diagnosis and thus results, for example, in improved pharmacokinetic properties (EP-A 0232 262). In drug discovery, for example, human proteins have been fused with Fc portions for the purpose of high-throughput screening assays to identify antagonists. Bennett *et al.*, *Journal of Molecular Recognition*, 8:52-58 (1995) and Johanson *et al.*, *The Journal of*
10 *Biological Chemistry*, 270,16:9459-9471 (1995). Thus, this invention also encompasses soluble fusion polypeptides containing a polypeptide of the invention and various portions of the constant regions of heavy or light chains of immunoglobulins of various subclasses (IgG, IgM, IgA, IgE).

A chimeric or fusion polypeptide can be produced by standard recombinant
15 DNA techniques. For example, DNA fragments coding for the different polypeptide sequences are ligated together in-frame in accordance with conventional techniques. In another embodiment, the fusion gene can be synthesized by conventional techniques including automated DNA synthesizers. Alternatively, PCR amplification of nucleic acid fragments can be carried out using anchor primers which give rise to
20 complementary overhangs between two consecutive nucleic acid fragments which can subsequently be annealed and re-amplified to generate a chimeric nucleic acid sequence (see Ausubel *et al.*, *Current Protocols in Molecular Biology*, 1992). Moreover, many expression vectors are commercially available that already encode a fusion moiety (*e.g.*, a GST protein). A nucleic acid molecule encoding a polypeptide
25 of the invention can be cloned into such an expression vector such that the fusion moiety is linked in-frame to the polypeptide.

The isolated polypeptide can be purified from cells that naturally express it, purified from cells that have been altered to express it (recombinant), or synthesized using known protein synthesis methods. In one embodiment, the polypeptide is
30 produced by recombinant DNA techniques. For example, a nucleic acid molecule encoding the polypeptide is cloned into an expression vector, the expression vector

-31-

introduced into a host cell and the polypeptide expressed in the host cell. The polypeptide can then be isolated from the cells by an appropriate purification scheme using standard protein purification techniques.

The polypeptides of the present invention can be used to raise antibodies or to
5 elicit an immune response. The polypeptides can also be used as a reagent, *e.g.*, a labeled reagent, in assays to quantitatively determine levels of the polypeptide or a molecule to which it binds (*e.g.*, a ligand) in biological fluids. The polypeptides can also be used as markers for cells or tissues in which the corresponding polypeptide is preferentially expressed, either constitutively, during tissue differentiation, or in
10 diseased states. The polypeptides can be used to isolate a corresponding binding agent, *e.g.*, ligand, such as, for example, in an interaction trap assay, and to screen for peptide or small molecule antagonists or agonists of the binding interaction. For example, because members of the leukotriene pathway including FLAP bind to receptors, the leukotriene pathway polypeptides can be used to isolate such receptors.

15

ANTIBODIES OF THE INVENTION

Polyclonal and/or monoclonal antibodies that specifically bind one form of the polypeptide or nucleic acid product (*e.g.*, a polypeptide encoded by a nucleic acid having a SNP as set forth in Table 3), but not to another form of the polypeptide or
20 nucleic acid product, are also provided. Antibodies are also provided which bind a portion of either polypeptide encoded by nucleic acids of the invention (*e.g.*, SEQ ID NO: 1 or SEQ ID NO: 3, or the complement of SEQ ID NO: 1 or SEQ ID NO: 3), or to a polypeptide encoded by nucleic acids of the invention that contain a polymorphic site or sites. The invention also provides antibodies to the polypeptides and
25 polypeptide fragments of the invention, or a portion thereof, or having an amino acid sequence encoded by a nucleic acid molecule comprising all or a portion of SEQ ID NOs: 1 or 3, or the complement thereof, or another variant or portion thereof. The term "antibody" as used herein refers to immunoglobulin molecules and immunologically active portions of immunoglobulin molecules, *i.e.*, molecules that
30 contain an antigen binding site that specifically binds an antigen. A molecule that specifically binds to a polypeptide of the invention is a molecule that binds to that

-32-

polypeptide or a fragment thereof, but does not substantially bind other molecules in a sample, *e.g.*, a biological sample, which naturally contains the polypeptide. Examples of immunologically active portions of immunoglobulin molecules include F(ab) and F(ab')₂ fragments which can be generated by treating the antibody with an enzyme
5 such as pepsin. The invention provides polyclonal and monoclonal antibodies that bind to a polypeptide of the invention. The term "monoclonal antibody" or "monoclonal antibody composition", as used herein, refers to a population of antibody molecules that contain only one species of an antigen binding site capable of immunoreacting with a particular epitope of a polypeptide of the invention. A
10 monoclonal antibody composition thus typically displays a single binding affinity for a particular polypeptide of the invention with which it immunoreacts.

Polyclonal antibodies can be prepared as described above by immunizing a suitable subject with a desired immunogen, *e.g.*, polypeptide of the invention or fragment thereof. The antibody titer in the immunized subject can be monitored over
15 time by standard techniques, such as with an enzyme linked immunosorbent assay (ELISA) using immobilized polypeptide. If desired, the antibody molecules directed against the polypeptide can be isolated from the mammal (*e.g.*, from the blood) and further purified by well-known techniques, such as protein A chromatography to obtain the IgG fraction. At an appropriate time after immunization, *e.g.*, when the
20 antibody titers are highest, antibody-producing cells can be obtained from the subject and used to prepare monoclonal antibodies by standard techniques, such as the hybridoma technique originally described by Kohler and Milstein, *Nature* 256:495-497 (1975), the human B cell hybridoma technique (Kozbor *et al.*, *Immunol. Today* 4:72 (1983)); the EBV-hybridoma technique (Cole *et al.*, *Monoclonal Antibodies and*
25 *Cancer Therapy*, Alan R. Liss, 1985, Inc., pp. 77-96); or trioma techniques. The technology for producing hybridomas is well known (see generally *Current Protocols in Immunology* (1994) Coligan *et al.* (eds.) John Wiley & Sons, Inc., New York, NY). Briefly, an immortal cell line (typically a myeloma) is fused to lymphocytes (typically splenocytes) from a mammal immunized with an immunogen as described above, and
30 the culture supernatants of the resulting hybridoma cells are screened to identify a

-33-

hybridoma producing a monoclonal antibody that binds a polypeptide of the invention.

Any of the many well known protocols used for fusing lymphocytes and immortalized cell lines can be applied for the purpose of generating a monoclonal
5 antibody to a polypeptide of the invention (see, *e.g.*, *Current Protocols in Immunology, supra*; Galfre *et al.*, *Nature* 266:55052 (1977); R.H. Kenneth, in *Monoclonal Antibodies: A New Dimension In Biological Analyses*, Plenum Publishing Corp., New York, New York (1980); and Lerner, *Yale J. Biol. Med.* 54:387-402 (1981). Moreover, the ordinarily skilled worker will appreciate that there are many
10 variations of such methods that also would be useful.

Alternative to preparing monoclonal antibody-secreting hybridomas, a monoclonal antibody to a polypeptide of the invention can be identified and isolated by screening a recombinant combinatorial immunoglobulin library (*e.g.*, an antibody phage display library) with the polypeptide to thereby isolate immunoglobulin library
15 members that bind the polypeptide. Kits for generating and screening phage display libraries are commercially available (*e.g.*, the Pharmacia *Recombinant Phage Antibody System*, Catalog No. 27-9400-01; and the Stratagene *SurfZAP™* Phage Display Kit, Catalog No. 240612). Additionally, examples of methods and reagents particularly amenable for use in generating and screening antibody display library can
20 be found in, for example, U.S. Patent No. 5,223,409; PCT Publication No. WO 92/18619; PCT Publication No. WO 91/17271; PCT Publication No. WO 92/20791; PCT Publication No. WO 92/15679; PCT Publication No. WO 93/01288; PCT Publication No. WO 92/01047; PCT Publication No. WO 92/09690; PCT Publication No. WO 90/02809; Fuchs *et al.*, *Bio/Technology* 9: 1370-1372 (1991); Hay *et al.*,
25 *Hum. Antibod. Hybridomas* 3:81-85 (1992); Huse *et al.*, *Science* 246:1275-1281 (1989); Griffiths *et al.*, *EMBO J.* 12:725-734 (1993).

Additionally, recombinant antibodies, such as chimeric and humanized monoclonal antibodies, comprising both human and non-human portions, which can be made using standard recombinant DNA techniques, are within the scope of the
30 invention. Such chimeric and humanized monoclonal antibodies can be produced by recombinant DNA techniques known in the art.

-34-

In general, antibodies of the invention (*e.g.*, a monoclonal antibody) can be used to isolate a polypeptide of the invention by standard techniques, such as affinity chromatography or immunoprecipitation. A polypeptide-specific antibody can facilitate the purification of natural polypeptide from cells and of recombinantly produced polypeptide expressed in host cells. Moreover, an antibody specific for a polypeptide of the invention can be used to detect the polypeptide (*e.g.*, in a cellular lysate, cell supernatant, or tissue sample) in order to evaluate the abundance and pattern of expression of the polypeptide. Antibodies can be used diagnostically to monitor protein levels in tissue as part of a clinical testing procedure, *e.g.*, to, for example, determine the efficacy of a given treatment regimen. Detection can be facilitated by coupling the antibody to a detectable substance. Examples of detectable substances include various enzymes, prosthetic groups, fluorescent materials, luminescent materials, bioluminescent materials, and radioactive materials. Examples of suitable enzymes include horseradish peroxidase, alkaline phosphatase, β -galactosidase, or acetylcholinesterase; examples of suitable prosthetic group complexes include streptavidin/biotin and avidin/biotin; examples of suitable fluorescent materials include umbelliferone, fluorescein, fluorescein isothiocyanate, rhodamine, dichlorotriazinylamine fluorescein, dansyl chloride or phycoerythrin; an example of a luminescent material includes luminol; examples of bioluminescent materials include luciferase, luciferin and aequorin, and examples of suitable radioactive material include ^{125}I , ^{131}I , ^{35}S or ^3H .

DIAGNOSTIC ASSAYS

The nucleic acids, probes, primers, polypeptides and antibodies described herein can be used in methods of diagnosis of MI or diagnosis of a susceptibility to MI or to a disease or condition associated with an MI gene, such as FLAP, as well as in kits useful for diagnosis of MI or a susceptibility to MI or to a disease or condition associated with FLAP. In one embodiment, the kit useful for diagnosis of MI or susceptibility to MI, or to a disease or condition associated with FLAP comprises primers as described herein, wherein the primers contain one or more of the SNPs identified in Table 3.

In one embodiment of the invention, diagnosis of MI or susceptibility to MI (or diagnosis of or susceptibility to a disease or condition associated with FLAP), is made by detecting a polymorphism in a FLAP nucleic acid as described herein. The polymorphism can be an alteration in a FLAP nucleic acid, such as the insertion or
5 deletion of a single nucleotide, or of more than one nucleotide, resulting in a frame shift alteration; the change of at least one nucleotide, resulting in a change in the encoded amino acid; the change of at least one nucleotide, resulting in the generation of a premature stop codon; the deletion of several nucleotides, resulting in a deletion of one or more amino acids encoded by the nucleotides; the insertion of one or several
10 nucleotides, such as by unequal recombination or gene conversion, resulting in an interruption of the coding sequence of the gene or nucleic acid; duplication of all or a part of the gene or nucleic acid; transposition of all or a part of the gene or nucleic acid; or rearrangement of all or a part of the gene or nucleic acid. More than one such alteration may be present in a single gene or nucleic acid. Such sequence changes
15 cause an alteration in the polypeptide encoded by a FLAP nucleic acid. For example, if the alteration is a frame shift alteration, the frame shift can result in a change in the encoded amino acids, and/or can result in the generation of a premature stop codon, causing generation of a truncated polypeptide. Alternatively, a polymorphism associated with a disease or condition associated with a FLAP nucleic acid or a
20 susceptibility to a disease or condition associated with a FLAP nucleic acid can be a synonymous alteration in one or more nucleotides (*i.e.*, an alteration that does not result in a change in the polypeptide encoded by a FLAP nucleic acid). Such a polymorphism may alter splicing sites, affect the stability or transport of mRNA, or otherwise affect the transcription or translation of the nucleic acid. A FLAP nucleic
25 acid that has any of the alteration described above is referred to herein as an “altered nucleic acid.”

In a first method of diagnosing MI or a susceptibility to MI, hybridization methods, such as Southern analysis, Northern analysis, or *in situ* hybridizations, can be used (see *Current Protocols in Molecular Biology*, Ausubel, F. *et al.*, eds., John
30 Wiley & Sons, including all supplements through 1999). For example, a biological sample from a test subject (a “test sample”) of genomic DNA, RNA, or cDNA, is

-36-

obtained from an individual suspected of having, being susceptible to or predisposed for, or carrying a defect for, a susceptibility to a disease or condition associated with a FLAP nucleic acid (the "test individual"). The individual can be an adult, child, or fetus. The test sample can be from any source which contains genomic DNA, such as
5 a blood sample, sample of amniotic fluid, sample of cerebrospinal fluid, or tissue sample from skin, muscle, buccal or conjunctival mucosa, placenta, gastrointestinal tract or other organs. A test sample of DNA from fetal cells or tissue can be obtained by appropriate methods, such as by amniocentesis or chorionic villus sampling. The DNA, RNA, or cDNA sample is then examined to determine whether a polymorphism
10 in a nucleic acid is present, and/or to determine which splicing variant(s) encoded by the FLAP is present. The presence of the polymorphism or splicing variant(s) can be indicated by hybridization of the nucleic acid in the genomic DNA, RNA, or cDNA to a nucleic acid probe. A "nucleic acid probe", as used herein, can be a DNA probe or an RNA probe; the nucleic acid probe can contain at least one polymorphism in a
15 FLAP nucleic acid or contains a nucleic acid encoding a particular splicing variant of a FLAP nucleic acid. The probe can be any of the nucleic acid molecules described above (*e.g.*, the nucleic acid, a fragment, a vector comprising the nucleic acid, a probe or primer, etc.).

To diagnose MI or a susceptibility to MI (or a disease or condition associated
20 with FLAP), the test sample containing a FLAP nucleic acid is contacted with at least one nucleic acid probe to form a hybridization sample. A preferred probe for detecting mRNA or genomic DNA is a labeled nucleic acid probe capable of hybridizing to mRNA or genomic DNA sequences described herein. The nucleic acid probe can be, for example, a full-length nucleic acid molecule, or a portion thereof,
25 such as an oligonucleotide of at least 15, 30, 50, 100, 250 or 500 nucleotides in length and sufficient to specifically hybridize under stringent conditions to appropriate mRNA or genomic DNA. For example, the nucleic acid probe can be all or a portion of one of SEQ ID NOs: 1 and 3, or the complement thereof or a portion thereof; or can be a nucleic acid encoding all or a portion of one of SEQ ID NO: 2. Other
30 suitable probes for use in the diagnostic assays of the invention are described above

(see *e.g.*, probes and primers discussed under the heading, “Nucleic Acids of the Invention”).

The hybridization sample is maintained under conditions that are sufficient to allow specific hybridization of the nucleic acid probe to a FLAP nucleic acid.

5 “Specific hybridization”, as used herein, indicates exact hybridization (*e.g.*, with no mismatches). Specific hybridization can be performed under high stringency conditions or moderate stringency conditions, for example, as described above. In a particularly preferred embodiment, the hybridization conditions for specific hybridization are high stringency.

10 Specific hybridization, if present, is then detected using standard methods. If specific hybridization occurs between the nucleic acid probe and FLAP nucleic acid in the test sample, then the FLAP has the polymorphism, or is the splicing variant, that is present in the nucleic acid probe. More than one nucleic acid probe can also be used concurrently in this method. Specific hybridization of any one of the nucleic
15 acid probes is indicative of a polymorphism in the FLAP nucleic acid, or of the presence of a particular splicing variant encoding the FLAP nucleic acid, and is therefore diagnostic for a disease or condition associated with FLAP or a susceptibility to a disease or condition associated with FLAP (*e.g.*, MI).

In Northern analysis (see *Current Protocols in Molecular Biology*, Ausubel, F.
20 *et al.*, eds., John Wiley & Sons, *supra*) the hybridization methods described above are used to identify the presence of a polymorphism or a particular splicing variant, associated with a disease or condition associated with or a susceptibility to a disease or condition associated with FLAP (*e.g.*, MI). For Northern analysis, a test sample of RNA is obtained from the individual by appropriate means. Specific hybridization of
25 a nucleic acid probe, as described above, to RNA from the individual is indicative of a polymorphism in a FLAP nucleic acid, or of the presence of a particular splicing variant encoded by a FLAP nucleic acid, and is therefore diagnostic for the disease or condition associated with FLAP, or for susceptibility to a disease or condition associated with FLAP (*e.g.*, MI).

30 For representative examples of use of nucleic acid probes, see, for example, U.S. Patents No. 5,288,611 and 4,851,330.

-38-

Alternatively, a peptide nucleic acid (PNA) probe can be used instead of a nucleic acid probe in the hybridization methods described above. PNA is a DNA mimic having a peptide-like, inorganic backbone, such as N-(2-aminoethyl)glycine units, with an organic base (A, G, C, T or U) attached to the glycine nitrogen via a methylene carbonyl linker (see, for example, Nielsen, P.E. *et al.*, *Bioconjugate Chemistry* 5, American Chemical Society, p. 1 (1994)). The PNA probe can be designed to specifically hybridize to a nucleic acid having a polymorphism associated with a disease or condition associated with FLAP or associated with a susceptibility to a disease or condition associated with FLAP (*e.g.*, MI). Hybridization of the PNA probe to a FLAP nucleic acid as described herein is diagnostic for the disease or condition or the susceptibility to the disease or condition.

In another method of the invention, mutation analysis by restriction digestion can be used to detect an altered nucleic acid, or nucleic acids containing a polymorphism(s), if the mutation or polymorphism in the nucleic acid results in the creation or elimination of a restriction site. A test sample containing genomic DNA is obtained from the individual. Polymerase chain reaction (PCR) can be used to amplify a FLAP nucleic acid (and, if necessary, the flanking sequences) in the test sample of genomic DNA from the test individual. RFLP analysis is conducted as described (see *Current Protocols in Molecular Biology, supra*). The digestion pattern of the relevant DNA fragment indicates the presence or absence of the alteration or polymorphism in the FLAP nucleic acid, and therefore indicates the presence or absence of a disease or condition associated with FLAP or the susceptibility to a disease or condition associated with FLAP (*e.g.*, MI).

Sequence analysis can also be used to detect specific polymorphisms in the FLAP nucleic acid. A test sample of DNA or RNA is obtained from the test individual. PCR or other appropriate methods can be used to amplify the nucleic acid, and/or its flanking sequences, if desired. The sequence of a FLAP nucleic acid, or a fragment of the nucleic acid, or cDNA, or fragment of the cDNA, or mRNA, or fragment of the mRNA, is determined, using standard methods. The sequence of the nucleic acid, nucleic acid fragment, cDNA, cDNA fragment, mRNA, or mRNA fragment is compared with the known nucleic acid sequence of the nucleic acid,

-39-

cDNA (*e.g.*, one or more of SEQ ID NOs: 1 or 3, and/or the complement of SEQ ID NO: 1 or 3), or a nucleic acid sequence encoding SEQ ID NO: 2 or a fragment thereof) or mRNA, as appropriate. The presence of a polymorphism in the FLAP indicates that the individual has disease or a susceptibility to a disease associated with
5 FLAP (*e.g.*, MI).

Allele-specific oligonucleotides can also be used to detect the presence of polymorphism(s) in the FLAP nucleic acid, through the use of dot-blot hybridization of amplified oligonucleotides with allele-specific oligonucleotide (ASO) probes (see, for example, Saiki, R. *et al.*, *Nature* 324:163-166 (1986)). An "allele-specific
10 oligonucleotide" (also referred to herein as an "allele-specific oligonucleotide probe") is an oligonucleotide of approximately 10-50 base pairs, for example, approximately 15-30 base pairs, that specifically hybridizes to a FLAP nucleic acid, and that contains a polymorphism associated with a disease or condition associated with FLAP or a susceptibility to a disease or condition associated with FLAP (*e.g.*, MI). An allele-
15 specific oligonucleotide probe that is specific for particular polymorphisms in a FLAP nucleic acid can be prepared, using standard methods (see *Current Protocols in Molecular Biology, supra*). To identify polymorphisms in the nucleic acid associated with disease or susceptibility to disease, a test sample of DNA is obtained from the individual. PCR can be used to amplify all or a fragment of a FLAP nucleic acid, and
20 its flanking sequences. The DNA containing the amplified FLAP nucleic acid (or fragment of the nucleic acid) is dot-blotted, using standard methods (see *Current Protocols in Molecular Biology, supra*), and the blot is contacted with the oligonucleotide probe. The presence of specific hybridization of the probe to the amplified FLAP is then detected. Specific hybridization of an allele-specific
25 oligonucleotide probe to DNA from the individual is indicative of a polymorphism in the FLAP, and is therefore indicative of a disease or condition associated with FLAP or a susceptibility to a disease or condition associated with FLAP (*e.g.*, MI).

An allele-specific primer hybridizes to a site on target DNA overlapping a polymorphism and only primes amplification of an allelic form to which the primer
30 exhibits perfect complementarity. See Gibbs, *Nucleic Acid Res.* 17, 2427-2448 (1989). This primer is used in conjunction with a second primer which hybridizes at a

-40-

distal site. Amplification proceeds from the two primers, resulting in a detectable product which indicates the particular allelic form is present. A control is usually performed with a second pair of primers, one of which shows a single base mismatch at the polymorphic site and the other of which exhibits perfect complementarity to a distal site. The single-base mismatch prevents amplification and no detectable product is formed. The method works best when the mismatch is included in the 3'-most position of the oligonucleotide aligned with the polymorphism because this position is most destabilizing to elongation from the primer (see, *e.g.*, WO 93/22456). In another embodiment, arrays of oligonucleotide probes that are complementary to target nucleic acid sequence segments from an individual, can be used to identify polymorphisms in a FLAP nucleic acid. For example, in one embodiment, an oligonucleotide array can be used. Oligonucleotide arrays typically comprise a plurality of different oligonucleotide probes that are coupled to a surface of a substrate in different known locations. These oligonucleotide arrays, also described as "Genechips™," have been generally described in the art, for example, U.S. Pat. No. 5,143,854 and PCT patent publication Nos. WO 90/15070 and WO 92/10092. These arrays can generally be produced using mechanical synthesis methods or light directed synthesis methods that incorporate a combination of photolithographic methods and solid phase oligonucleotide synthesis methods. See Fodor *et al.*, *Science* 251:767-777 (1991); Pirrung *et al.*, U.S. Pat. 5,143,854; (see also PCT Application WO 90/15070); Fodor *et al.*, PCT Publication WO 92/10092; and U.S. Pat. 5,424,186, the entire teachings of each of which are incorporated by reference herein. Techniques for the synthesis of these arrays using mechanical synthesis methods are described in, *e.g.*, U.S. Pat. 5,384,261, the entire teachings of which are incorporated by reference herein. In another example, linear arrays can be utilized.

Once an oligonucleotide array is prepared, a nucleic acid of interest is hybridized with the array and scanned for polymorphisms. Hybridization and scanning are generally carried out by methods described herein and also in, *e.g.*, published PCT Application Nos. WO 92/10092 and WO 95/11995, and U.S. Pat. No. 5,424,186, the entire teachings of which are incorporated by reference herein. In brief, a target nucleic acid sequence that includes one or more previously identified

-41-

polymorphic markers is amplified using well-known amplification techniques, *e.g.*, PCR. Typically, this involves the use of primer sequences that are complementary to the two strands of the target sequence both upstream and downstream from the polymorphism. Asymmetric PCR techniques may also be used. Amplified target, 5 generally incorporating a label, is then hybridized with the array under appropriate conditions. Upon completion of hybridization and washing of the array, the array is scanned to determine the position on the array to which the target sequence hybridizes. The hybridization data obtained from the scan is typically in the form of fluorescence intensities as a function of location on the array. In a reverse method, a 10 probe, containing a polymorphism, can be coupled to a solid surface and PCR amplicons are then added to hybridize to these probes.

Although primarily described in terms of a single detection block, *e.g.*, detection of a single polymorphism arrays can include multiple detection blocks, and thus be capable of analyzing multiple, specific polymorphisms. It will generally be 15 understood that detection blocks may be grouped within a single array or in multiple, separate arrays so that varying, optimal conditions may be used during the hybridization of the target to the array. For example, it may often be desirable to provide for the detection of those polymorphisms that fall within G-C rich stretches of a genomic sequence, separately from those falling in A-T rich segments. This allows 20 for the separate optimization of hybridization conditions for each situation.

Additional uses of oligonucleotide arrays for detection of polymorphisms can be found, for example, in U.S. Patents Nos. 5,858,659 and 5,837,832, the entire teachings of which are incorporated by reference herein. Other methods of nucleic acid analysis can be used to detect polymorphisms in a nucleic acid described herein, 25 or variants encoded by a nucleic acid described herein. Representative methods include direct manual sequencing (Church and Gilbert, *Proc. Natl. Acad. Sci. USA* 81:1991-1995 (1988); Sanger, F. *et al.*, *Proc. Natl. Acad. Sci., USA* 74:5463-5467 (1977); Beavis *et al.* U.S. Pat. No. 5,288,644); automated fluorescent sequencing; single-stranded conformation polymorphism assays (SSCP); clamped denaturing gel 30 electrophoresis (CDGE); denaturing gradient gel electrophoresis (DGGE) (Sheffield, V.C. *et al.*, *Proc. Natl. Acad. Sci. USA* 86:232-236 (1989)), mobility shift analysis

(Orita, M. *et al.*, *Proc. Natl. Acad. Sci. USA* 86:2766-2770 (1989)), restriction enzyme analysis (Flavell *et al.*, *Cell* 15:25 (1978); Geever, *et al.*, *Proc. Natl. Acad. Sci. USA* 78:5081 (1981)); heteroduplex analysis; chemical mismatch cleavage (CMC) (Cotton *et al.*, *Proc. Natl. Acad. Sci. USA* 85:4397-4401 (1985)); RNase protection assays
5 (Myers, R.M. *et al.*, *Science* 230:1242 (1985)); use of polypeptides which recognize nucleotide mismatches, such as *E. coli* mutS protein; allele-specific PCR, for example.

In one embodiment of the invention, diagnosis of a disease or condition associated with FLAP (*e.g.*, MI) or a susceptibility to a disease or condition associated
10 with FLAP (*e.g.*, MI) can also be made by expression analysis by quantitative PCR (kinetic thermal cycling). This technique utilizing TaqMan[®] can be used to allow the identification of polymorphisms and whether a patient is homozygous or heterozygous. The technique can assess the presence of an alteration in the expression or composition of the polypeptide encoded by a FLAP nucleic acid or
15 splicing variants encoded by a FLAP nucleic acid. Further, the expression of the variants can be quantified as physically or functionally different.

In another embodiment of the invention, diagnosis of MI or a susceptibility to MI (or of another disease or condition associated with FLAP) can also be made by examining expression and/or composition of a FLAP polypeptide, by a variety of
20 methods, including enzyme linked immunosorbent assays (ELISAs), Western blots, immunoprecipitations and immunofluorescence. A test sample from an individual is assessed for the presence of an alteration in the expression and/or an alteration in composition of the polypeptide encoded by a FLAP nucleic acid, or for the presence of a particular variant encoded by a FLAP nucleic acid. An alteration in expression of
25 a polypeptide encoded by a FLAP nucleic acid can be, for example, an alteration in the quantitative polypeptide expression (*i.e.*, the amount of polypeptide produced); an alteration in the composition of a polypeptide encoded by a FLAP nucleic acid is an alteration in the qualitative polypeptide expression (*e.g.*, expression of an altered FLAP polypeptide or of a different splicing variant). In a preferred embodiment,
30 diagnosis of disease or condition associated with FLAP or a susceptibility to a disease

or condition associated with FLAP is made by detecting a particular splicing variant encoded by that FLAP variant, or a particular pattern of splicing variants.

Both such alterations (quantitative and qualitative) can also be present. An “alteration” in the polypeptide expression or composition, refers to an alteration in
5 expression or composition in a test sample, as compared with the expression or composition of polypeptide by a FLAP nucleic acid in a control sample. A control sample is a sample that corresponds to the test sample (*e.g.*, is from the same type of cells), and is from an individual who is not affected by the disease or a susceptibility to a disease or condition associated with a FLAP nucleic acid. An alteration in the
10 expression or composition of the polypeptide in the test sample, as compared with the control sample, is indicative of disease or condition associated with FLAP or a susceptibility to a disease or condition associated with FLAP (*e.g.*, MI). Similarly, the presence of one or more different splicing variants in the test sample, or the presence of significantly different amounts of different splicing variants in the test
15 sample, as compared with the control sample, is indicative of a susceptibility to a disease or condition associated with a FLAP nucleic acid. Various means of examining expression or composition of the polypeptide encoded by a FLAP nucleic acid can be used, including: spectroscopy, colorimetry, electrophoresis, isoelectric focusing and immunoassays (*e.g.*, David *et al.*, U.S. Pat. 4,376,110) such as
20 immunoblotting (see also *Current Protocols in Molecular Biology*, particularly Chapter 10). For example, in one embodiment, an antibody capable of binding to the polypeptide (*e.g.*, as described above), preferably an antibody with a detectable label, can be used. Antibodies can be polyclonal, or more preferably, monoclonal. An intact antibody, or a fragment thereof (*e.g.*, Fab or F(ab')₂) can be used. The term
25 “labeled”, with regard to the probe or antibody, is intended to encompass direct labeling of the probe or antibody by coupling (*i.e.*, physically linking) a detectable substance to the probe or antibody, as well as indirect labeling of the probe or antibody by reactivity with another reagent that is directly labeled. Examples of indirect labeling include detection of a primary antibody using a fluorescently labeled
30 secondary antibody and end-labeling of a DNA probe with biotin such that it can be detected with fluorescently labeled streptavidin.

Western blotting analysis, using an antibody as described above that specifically binds to a polypeptide encoded by an altered FLAP (*e.g.*, by a FLAP having a SNP as shown in Table 3), or an antibody that specifically binds to a polypeptide encoded by a non-altered nucleic acid, or an antibody that specifically
5 binds to a particular splicing variant encoded by a nucleic acid, can be used to identify the presence in a test sample of a particular splicing variant or of a polypeptide encoded by a polymorphic or altered FLAP, or the absence in a test sample of a particular splicing variant or of a polypeptide encoded by a non-polymorphic or non-altered nucleic acid. The presence of a polypeptide encoded by a polymorphic or
10 altered nucleic acid, or the absence of a polypeptide encoded by a non-polymorphic or non-altered nucleic acid, is diagnostic for disease or condition associated with FLAP or a susceptibility to a disease or condition associated with, as is the presence (or absence) of particular splicing variants encoded by the FLAP nucleic acid.

In one embodiment of this method, the level or amount of polypeptide
15 encoded by a FLAP nucleic acid in a test sample is compared with the level or amount of the polypeptide encoded by the FLAP in a control sample. A level or amount of the polypeptide in the test sample that is higher or lower than the level or amount of the polypeptide in the control sample, such that the difference is statistically significant, is indicative of an alteration in the expression of the polypeptide encoded
20 by the FLAP, and is diagnostic for disease or condition, or for a susceptibility to a disease or condition, associated with that FLAP. Alternatively, the composition of the polypeptide encoded by a FLAP nucleic acid in a test sample is compared with the composition of the polypeptide encoded by the FLAP in a control sample (*e.g.*, the presence of different splicing variants). A difference in the composition of the
25 polypeptide in the test sample, as compared with the composition of the polypeptide in the control sample, is diagnostic for a disease or condition, or for a susceptibility to a disease or condition, associated with that FLAP. In another embodiment, both the level or amount and the composition of the polypeptide can be assessed in the test sample and in the control sample. A difference in the amount or level of the
30 polypeptide in the test sample, compared to the control sample; a difference in composition in the test sample, compared to the control sample; or both a difference

in the amount or level, and a difference in the composition, is indicative of a disease or condition, or a susceptibility to a disease or condition, associated with FLAP (*e.g.*, MI).

The invention further pertains to a method for the diagnosis and identification
5 of susceptibility to myocardial infarction in an individual, by identifying an at-risk
haplotype in FLAP. In one embodiment, the at-risk haplotype is one which confers a
significant risk of MI. In one embodiment, significance associated with a haplotype is
measured by an odds ratio. In a further embodiment, the significance is measured by
a percentage. In one embodiment, a significant risk is measured as an odds ratio of at
10 least about 1.2, including by not limited to: 1.2, 1.3, 1.4, 1.5, 1.6, 1.7, 1.8 and 1.9. In
a further embodiment, an odds ratio of at least 1.2 is significant. In a further
embodiment, an odds ratio of at least about 1.5 is significant. In a further
embodiment, a significant increase in risk is at least about 1.7 is significant. In a
further embodiment, a significant increase in risk is at least about 20%, including but
15 not limited to about 25%, 30%, 35%, 40%, 45%, 50%, 55%, 60%, 65%, 70%, 75%,
80%, 85%, 90%, 95%, and 98%. In a further embodiment, a significant increase in
risk is at least about 50%. It is understood however, that identifying whether a risk is
medically significant may also depend on a variety of factors, including the specific
disease, the haplotype, and often, environmental factors.

20 The invention also pertains to methods of diagnosing myocardial infarction or
a susceptibility to myocardial infarction in an individual, comprising screening for an
at-risk haplotype in the FLAP nucleic acid that is more frequently present in an
individual susceptible to myocardial infarction (affected), compared to the frequency
of its presence in a healthy individual (control), wherein the presence of the haplotype
25 is indicative of myocardial infarction or susceptibility to myocardial infarction.

Standard techniques for genotyping for the presence of SNPs and/or microsatellite
markers that are associated with myocardial infarction can be used, such as
fluorescent based techniques (Chen, *et al.*, *Genome Res.* 9, 492 (1999), PCR, LCR,
Nested PCR and other techniques for nucleic acid amplification. In a preferred
30 embodiment, the method comprises assessing in an individual the presence or
frequency of SNPs and/or microsatellites in the FLAP nucleic acid that are associated

with myocardial infarction, wherein an excess or higher frequency of the SNPs and/or microsatellites compared to a healthy control individual is indicative that the individual has myocardial infarction or is susceptible to myocardial infarction. See Table 3 that sets forth SNPs and markers for use as screening tools.

5 In one embodiment, the at-risk haplotype is characterized by the presence of polymorphism(s) represented in Table 3. For example, DG00AAFIU at position 256047, where the SNP can be a "C" or a "T"; SG13S25 at position 283477, where the SNP can be a "G" or an "A"; DG00AAJFF at position 287889, where the SNP can be a "G" or an "A"; DG00AAHII at position 294503, where the SNP can be a
10 "G" or an "A"; DG00AAHID at position 296020, where the SNP can be a "T" or an "A"; B_SNP_310657 at position 310657, where the SNP can be a "G" or an "A"; SG13S30 at position 312056, where the SNP can be a "G" or a "T"; SG13S32 at position 316763, where the SNP can be a "C" or an "A"; SG13S42 at position 320393, where the SNP can be a "G" or an "A"; and SG13S35 at position 324333,
15 where the SNP can be a "G" or an "A". Kits (*e.g.*, reagent kits) useful in the methods of diagnosis comprise components useful in any of the methods described herein, including for example, hybridization probes or primers as described herein (*e.g.*, labeled probes or primers), reagents for detection of labeled molecules, restriction enzymes (*e.g.*, for RFLP analysis), allele-specific oligonucleotides, antibodies which
20 bind to altered or to non-altered (native) FLAP polypeptide, means for amplification of nucleic acids comprising a FLAP, or means for analyzing the nucleic acid sequence of a nucleic acid described herein, or for analyzing the amino acid sequence of a polypeptide as described herein, etc. In one embodiment, a kit for diagnosing MI or susceptibility to MI can comprise primers for nucleic acid amplification of a region in
25 the FLAP nucleic acid comprising an at-risk haplotype that is more frequently present in an individual having MI or susceptible to MI. The primers can be designed using portions of the nucleic acids flanking SNPs that are indicative of MI. In a particularly preferred embodiment, the primers are designed to amplify regions of the FLAP nucleic acid associated with an at-risk haplotype for MI, or more particularly the
30 haplotypes defined by the following SNPs: DG00AAFIU, SG13S25, DG00AAJFF,

-47-

DG00AAHII, DG00AAHID, B_SNP_310657, SG13S30, SG13S32, SG13S42, and SG13S35 , at the locus on chromosome 13q12.

SCREENING ASSAYS AND AGENTS IDENTIFIED THERBY

5 The invention provides methods (also referred to herein as “screening assays”) for identifying the presence of a nucleotide that hybridizes to a nucleic acid of the invention, as well as for identifying the presence of a polypeptide encoded by a nucleic acid of the invention. In one embodiment, the presence (or absence) of a nucleic acid molecule of interest (*e.g.*, a nucleic acid that has significant homology
10 with a nucleic acid of the invention) in a sample can be assessed by contacting the sample with a nucleic acid comprising a nucleic acid of the invention (*e.g.*, a nucleic acid having the sequence of one of SEQ ID NOs: 1 or 3 or the complement thereof, or a nucleic acid encoding an amino acid having the sequence of SEQ ID NO: 2, or a fragment or variant of such nucleic acids), under stringent conditions as described
15 above, and then assessing the sample for the presence (or absence) of hybridization. In a preferred embodiment, high stringency conditions are conditions appropriate for selective hybridization. In another embodiment, a sample containing a nucleic acid molecule of interest is contacted with a nucleic acid containing a contiguous nucleic acid sequence (*e.g.*, a primer or a probe as described above) that is at least partially
20 complementary to a part of the nucleic acid molecule of interest (*e.g.*, a FLAP nucleic acid), and the contacted sample is assessed for the presence or absence of hybridization. In a preferred embodiment, the nucleic acid containing a contiguous nucleic acid sequence is completely complementary to a part of the nucleic acid molecule of interest.

25 In any of these embodiments, all or a portion of the nucleic acid of interest can be subjected to amplification prior to performing the hybridization.

 In another embodiment, the presence (or absence) of a polypeptide of interest, such as a polypeptide of the invention or a fragment or variant thereof, in a sample can be assessed by contacting the sample with an antibody that specifically hybridizes
30 to the polypeptide of interest (*e.g.*, an antibody such as those described above), and

then assessing the sample for the presence (or absence) of binding of the antibody to the polypeptide of interest.

In another embodiment, the invention provides methods for identifying agents (*e.g.*, fusion proteins, polypeptides, peptidomimetics, prodrugs, receptors, binding agents, antibodies, small molecules or other drugs, or ribozymes which alter (*e.g.*, increase or decrease) the activity of the polypeptides described herein, or which otherwise interact with the polypeptides herein. For example, such agents can be agents which bind to polypeptides described herein (*e.g.*, binding agent for members of the leukotriene pathway, such as FLAP binding agents); which have a stimulatory or inhibitory effect on, for example, activity of polypeptides of the invention; or which change (*e.g.*, enhance or inhibit) the ability of the polypeptides of the invention to interact with members of the leukotriene pathway binding agents (*e.g.*, receptors or other binding agents); or which alter posttranslational processing of the leukotriene pathway member polypeptide, such as a FLAP polypeptide (*e.g.*, agents that alter proteolytic processing to direct the polypeptide from where it is normally synthesized to another location in the cell, such as the cell surface; agents that alter proteolytic processing such that more polypeptide is released from the cell, etc.)

In one embodiment, the invention provides assays for screening candidate or test agents that bind to or modulate the activity of polypeptides described herein (or biologically active portion(s) thereof), as well as agents identifiable by the assays. Test agents can be obtained using any of the numerous approaches in combinatorial library methods known in the art, including: biological libraries; spatially addressable parallel solid phase or solution phase libraries; synthetic library methods requiring deconvolution; the 'one-bead one-compound' library method; and synthetic library methods using affinity chromatography selection. The biological library approach is limited to polypeptide libraries, while the other four approaches are applicable to polypeptide, non-peptide oligomer or small molecule libraries of compounds (Lam, K.S., *Anticancer Drug Des.* 12:145 (1997)).

In one embodiment, to identify agents which alter the activity of a FLAP polypeptide, a cell, cell lysate, or solution containing or expressing a FLAP polypeptide (*e.g.*, SEQ ID NO: 2 or another splicing variant encoded by a FLAP

nucleic acid, such as a nucleic acid comprising a SNP as shown in Table 3), or a fragment or derivative thereof (as described above), can be contacted with an agent to be tested; alternatively, the polypeptide can be contacted directly with the agent to be tested. The level (amount) of FLAP activity is assessed (*e.g.*, the level (amount) of
5 FLAP activity is measured, either directly or indirectly), and is compared with the level of activity in a control (*i.e.*, the level of activity of the FLAP polypeptide or active fragment or derivative thereof in the absence of the agent to be tested). If the level of the activity in the presence of the agent differs, by an amount that is statistically significant, from the level of the activity in the absence of the agent, then
10 the agent is an agent that alters the activity of a FLAP polypeptide. An increase in the level of FLAP activity in the presence of the agent relative to the activity in the absence of the agent, indicates that the agent is an agent that enhances (is an agonist of) FLAP activity. Similarly, a decrease in the level of FLAP activity in the presence of the agent, relative to the activity in the absence of the agent, indicates that the agent
15 is an agent that inhibits (is an antagonist of) FLAP activity. In another embodiment, the level of activity of a FLAP polypeptide or derivative or fragment thereof in the presence of the agent to be tested, is compared with a control level that has previously been established. A statistically significant difference in the level of the activity in the presence of the agent from the control level indicates that the agent alters FLAP
20 activity.

The present invention also relates to an assay for identifying agents which alter the expression of a FLAP nucleic acid (*e.g.*, antisense nucleic acids, fusion proteins, polypeptides, peptidomimetics, prodrugs, receptors, binding agents, antibodies, small molecules or other drugs, or ribozymes; which alter (*e.g.*, increase or
25 decrease) expression (*e.g.*, transcription or translation) of the nucleic acid or which otherwise interact with the nucleic acids described herein, as well as agents identifiable by the assays. For example, a solution containing a nucleic acid encoding a FLAP polypeptide (*e.g.*, a FLAP nucleic acid) can be contacted with an agent to be tested. The solution can comprise, for example, cells containing the nucleic acid or
30 cell lysate containing the nucleic acid; alternatively, the solution can be another solution that comprises elements necessary for transcription/translation of the nucleic

acid. Cells not suspended in solution can also be employed, if desired. The level and/or pattern of FLAP expression (*e.g.*, the level and/or pattern of mRNA or of protein expressed, such as the level and/or pattern of different splicing variants) is assessed, and is compared with the level and/or pattern of expression in a control (*i.e.*,
5 the level and/or pattern of the FLAP expression in the absence of the agent to be tested). If the level and/or pattern in the presence of the agent differ, by an amount or in a manner that is statistically significant, from the level and/or pattern in the absence of the agent, then the agent is an agent that alters the expression of the FLAP nucleic acid. Enhancement of FLAP expression indicates that the agent is an agonist of
10 FLAP activity. Similarly, inhibition of FLAP expression indicates that the agent is an antagonist of FLAP activity.

In another embodiment, the level and/or pattern of FLAP polypeptide(s) (*e.g.*, different splicing variants) in the presence of the agent to be tested, is compared with a control level and/or pattern that have previously been established. A level and/or
15 pattern in the presence of the agent that differs from the control level and/or pattern by an amount or in a manner that is statistically significant indicates that the agent alters FLAP expression.

In another embodiment of the invention, agents which alter the expression of a FLAP nucleic acid or which otherwise interact with the nucleic acids described
20 herein, can be identified using a cell, cell lysate, or solution containing a nucleic acid encoding the promoter region of the FLAP nucleic acid operably linked to a reporter gene. After contact with an agent to be tested, the level of expression of the reporter gene (*e.g.*, the level of mRNA or of protein expressed) is assessed, and is compared with the level of expression in a control (*i.e.*, the level of the expression of the
25 reporter gene in the absence of the agent to be tested). If the level in the presence of the agent differs, by an amount or in a manner that is statistically significant, from the level in the absence of the agent, then the agent is an agent that alters the expression of the FLAP nucleic acid, as indicated by its ability to alter expression of a nucleic acid that is operably linked to the FLAP nucleic acid promoter.

30 Enhancement of the expression of the reporter indicates that the agent is an agonist of FLAP activity. Similarly, inhibition of the expression of the reporter

-51-

indicates that the agent is an antagonist of FLAP activity. In another embodiment, the level of expression of the reporter in the presence of the test agent, is compared with a control level that has previously been established. A level in the presence of the agent that differs from the control level by an amount or in a manner that is statistically
5 significant indicates that the agent alters expression.

Agents which alter the amounts of different splicing variants encoded by a FLAP nucleic acid (*e.g.*, an agent which enhances activity of a first splicing variant, and which inhibits activity of a second splicing variant), as well as agents which are agonists of activity of a first splicing variant and antagonists of activity of a second
10 splicing variant, can easily be identified using these methods described above.

In other embodiments of the invention, assays can be used to assess the impact of a test agent on the activity of a polypeptide relative to a FLAP binding agent. For example, a cell that expresses a compound that interacts with a FLAP nucleic acid (herein referred to as a "FLAP binding agent", which can be a polypeptide or other
15 molecule that interacts with a FLAP nucleic acid, such as a receptor, or another molecule, such as 5-LO) is contacted with a FLAP in the presence of a test agent, and the ability of the test agent to alter the interaction between the FLAP and the FLAP binding agent is determined. Alternatively, a cell lysate or a solution containing the FLAP binding agent, can be used. An agent which binds to the FLAP or the FLAP
20 binding agent can alter the interaction by interfering with, or enhancing the ability of the FLAP to bind to, associate with, or otherwise interact with the FLAP binding agent. Determining the ability of the test agent to bind to a FLAP nucleic acid or a FLAP nucleic acid binding agent can be accomplished, for example, by coupling the test agent with a radioisotope or enzymatic label such that binding of the test agent to
25 the polypeptide can be determined by detecting the labeled with ^{125}I , ^{35}S , ^{14}C or ^3H , either directly or indirectly, and the radioisotope detected by direct counting of radioemmission or by scintillation counting. Alternatively, test agents can be enzymatically labeled with, for example, horseradish peroxidase, alkaline phosphatase, or luciferase, and the enzymatic label detected by determination of
30 conversion of an appropriate substrate to product. It is also within the scope of this invention to determine the ability of a test agent to interact with the polypeptide

-52-

without the labeling of any of the interactants. For example, a microphysiometer can be used to detect the interaction of a test agent with a FLAP or a FLAP binding agent without the labeling of either the test agent, FLAP, or the FLAP binding agent.

McConnell, H.M. *et al.*, *Science* 257:1906-1912 (1992). As used herein, a

5 “microphysiometer” (*e.g.*, Cytosensor™) is an analytical instrument that measures the rate at which a cell acidifies its environment using a light-addressable potentiometric sensor (LAPS). Changes in this acidification rate can be used as an indicator of the interaction between ligand and polypeptide.

Thus, these receptors can be used to screen for compounds that are agonists
10 for use in treating a disease or condition associated with FLAP or a susceptibility to a disease or condition associated with FLAP, or antagonists for studying a susceptibility to a disease or condition associated with FLAP (*e.g.*, MI). Drugs can be designed to regulate FLAP activation, that in turn can be used to regulate signaling pathways and transcription events of genes downstream or of proteins or polypeptides interacting
15 with FLAP (*e.g.*, 5-LO).

In another embodiment of the invention, assays can be used to identify polypeptides that interact with one or more FLAP polypeptides, as described herein. For example, a yeast two-hybrid system such as that described by Fields and Song (Fields, S. and Song, O., *Nature* 340:245-246 (1989)) can be used to identify
20 polypeptides that interact with one or more FLAP polypeptides. In such a yeast two-hybrid system, vectors are constructed based on the flexibility of a transcription factor that has two functional domains (a DNA binding domain and a transcription activation domain). If the two domains are separated but fused to two different proteins that interact with one another, transcriptional activation can be achieved, and
25 transcription of specific markers (*e.g.*, nutritional markers such as His and Ade, or color markers such as lacZ) can be used to identify the presence of interaction and transcriptional activation. For example, in the methods of the invention, a first vector is used which includes a nucleic acid encoding a DNA binding domain and also a FLAP polypeptide, splicing variant, or fragment or derivative thereof, and a second
30 vector is used which includes a nucleic acid encoding a transcription activation domain and also a nucleic acid encoding a polypeptide which potentially may interact

with the FLAP polypeptide, splicing variant, or fragment or derivative thereof (*e.g.*, a FLAP polypeptide binding agent or receptor). Incubation of yeast containing the first vector and the second vector under appropriate conditions (*e.g.*, mating conditions such as used in the Matchmaker™ system from Clontech (Palo Alto, California, 5 USA)) allows identification of colonies that express the markers of interest. These colonies can be examined to identify the polypeptide(s) that interact with the FLAP polypeptide or fragment or derivative thereof. Such polypeptides may be useful as agents that alter the activity of expression of a FLAP polypeptide, as described above.

In more than one embodiment of the above assay methods of the present 10 invention, it may be desirable to immobilize either the FLAP, the FLAP binding agent, or other components of the assay on a solid support, in order to facilitate separation of complexed from uncomplexed forms of one or both of the polypeptides, as well as to accommodate automation of the assay. Binding of a test agent to the polypeptide, or interaction of the polypeptide with a binding agent in the presence and 15 absence of a test agent, can be accomplished in any vessel suitable for containing the reactants. Examples of such vessels include microtitre plates, test tubes, and micro-centrifuge tubes. In one embodiment, a fusion protein (*e.g.*, a glutathione-S-transferase fusion protein) can be provided which adds a domain that allows a FLAP nucleic acid or a FLAP binding agent to be bound to a matrix or other solid support.

20 In another embodiment, modulators of expression of nucleic acid molecules of the invention are identified in a method wherein a cell, cell lysate, or solution containing a nucleic acid encoding a FLAP nucleic acid is contacted with a test agent and the expression of appropriate mRNA or polypeptide (*e.g.*, splicing variant(s)) in the cell, cell lysate, or solution, is determined. The level of expression of appropriate 25 mRNA or polypeptide(s) in the presence of the test agent is compared to the level of expression of mRNA or polypeptide(s) in the absence of the test agent. The test agent can then be identified as a modulator of expression based on this comparison. For example, when expression of mRNA or polypeptide is greater (statistically significantly greater) in the presence of the test agent than in its absence, the test agent 30 is identified as a stimulator or enhancer of the mRNA or polypeptide expression. Alternatively, when expression of the mRNA or polypeptide is less (statistically

significantly less) in the presence of the test agent than in its absence, the test agent is identified as an inhibitor of the mRNA or polypeptide expression. The level of mRNA or polypeptide expression in the cells can be determined by methods described herein for detecting mRNA or polypeptide.

5 In yet another embodiment, the invention provides methods for identifying agents (*e.g.*, fusion proteins, polypeptides, peptidomimetics, prodrugs, receptors, binding agents, antibodies, small molecules or other drugs, or ribozymes) which alter (*e.g.*, increase or decrease) the activity of a member of leukotriene pathway binding agent, such as a FLAP binding agent (*e.g.*, 5-LO), as described herein. For example,
10 such agents can be agents which have a stimulatory or inhibitory effect on, for example, the activity of a member of leukotriene pathway binding agent, such as a FLAP binding agent; which change (*e.g.*, enhance or inhibit) the ability a member of leukotriene pathway binding agents, (*e.g.*, receptors or other binding agents) to interact with the polypeptides of the invention; or which alter posttranslational
15 processing of the member of leukotriene pathway binding agent, (*e.g.*, agents that alter proteolytic processing to direct the member of the leukotriene pathway binding agent from where it is normally synthesized to another location in the cell, such as the cell surface; agents that alter proteolytic processing such that more active binding agent is released from the cell, etc.).

20 For example, the invention provides assays for screening candidate or test agents that bind to or modulate the activity of a member of the leukotriene pathway (or enzymatically active portion(s) thereof), as well as agents identifiable by the assays. As described above, test agents can be obtained using any of the numerous approaches in combinatorial library methods known in the art, including: biological
25 libraries; spatially addressable parallel solid phase or solution phase libraries; synthetic library methods requiring deconvolution; the 'one-bead one-compound' library method; and synthetic library methods using affinity chromatography selection. The biological library approach is limited to polypeptide libraries, while the other four approaches are applicable to polypeptide, non-peptide oligomer or
30 small molecule libraries of compounds (Lam, K.S. *Anticancer Drug Des.*, 12:145 (1997)).

In one embodiment, to identify agents which alter the activity of a member of the leukotriene pathway (such as a FLAP binding agent), a cell, cell lysate, or solution containing or expressing a binding agent (*e.g.*, 5-LO, or a leukotriene pathway member receptor), or a fragment (*e.g.*, an enzymatically active fragment) or derivative thereof, can be contacted with an agent to be tested; alternatively, the binding agent (or fragment or derivative thereof) can be contacted directly with the agent to be tested. The level (amount) of binding agent activity is assessed (either directly or indirectly), and is compared with the level of activity in a control (*i.e.*, the level of activity in the absence of the agent to be tested). If the level of the activity in the presence of the agent differs, by an amount that is statistically significant, from the level of the activity in the absence of the agent, then the agent is an agent that alters the activity of the member of the leukotriene pathway. An increase in the level of the activity relative to a control, indicates that the agent is an agent that enhances (is an agonist of) the activity. Similarly, a decrease in the level of activity relative to a control, indicates that the agent is an agent that inhibits (is an antagonist of) the activity. In another embodiment, the level of activity in the presence of the agent to be tested, is compared with a control level that has previously been established. A level of the activity in the presence of the agent that differs from the control level by an amount that is statistically significant indicates that the agent alters the activity.

This invention further pertains to novel agents identified by the above-described screening assays. Accordingly, it is within the scope of this invention to further use an agent identified as described herein in an appropriate animal model. For example, an agent identified as described herein (*e.g.*, a test agent that is a modulating agent, an antisense nucleic acid molecule, a specific antibody, or a polypeptide-binding agent) can be used in an animal model to determine the efficacy, toxicity, or side effects of treatment with such an agent. Alternatively, an agent identified as described herein can be used in an animal model to determine the mechanism of action of such an agent.

Furthermore, this invention pertains to uses of novel agents identified by the above-described screening assays for treatments as described herein. In addition, an agent identified as described herein can be used to alter activity of a polypeptide

-56-

encoded by a FLAP nucleic acid, or to alter expression of a FLAP nucleic acid, by contacting the polypeptide or the nucleic acid (or contacting a cell comprising the polypeptide or the nucleic acid) with the agent identified as described herein.

5 PHARMACEUTICAL COMPOSITIONS

The present invention also pertains to pharmaceutical compositions comprising nucleic acids described herein, particularly nucleotides encoding the polypeptides described herein; comprising polypeptides described herein (*e.g.*, one or more of SEQ ID NO: 1 or 3 or the complement thereof, and/or comprising other
10 splicing variants encoded by a FLAP nucleic acid; and/or an agent that alters (*e.g.*, enhances or inhibits) FLAP nucleic acid expression or FLAP polypeptide activity as described herein. For instance, a polypeptide, protein (*e.g.*, a FLAP receptor), an agent that alters FLAP nucleic acid expression, or a FLAP nucleic acid binding agent or binding partner, fragment, fusion protein or pro-drug thereof, or a nucleotide or
15 nucleic acid construct (vector) comprising a nucleotide of the present invention, or an agent that alters FLAP polypeptide activity, can be formulated with a physiologically acceptable carrier or excipient to prepare a pharmaceutical composition. The carrier and composition can be sterile. The formulation should suit the mode of administration.

20 Suitable pharmaceutically acceptable carriers include but are not limited to water, salt solutions (*e.g.*, NaCl), saline, buffered saline, alcohols, glycerol, ethanol, gum arabic, vegetable oils, benzyl alcohols, polyethylene glycols, gelatin, carbohydrates such as lactose, amylose or starch, dextrose, magnesium stearate, talc, silicic acid, viscous paraffin, perfume oil, fatty acid esters, hydroxymethylcellulose,
25 polyvinyl pyrrolidone, etc., as well as combinations thereof. The pharmaceutical preparations can, if desired, be mixed with auxiliary agents, *e.g.*, lubricants, preservatives, stabilizers, wetting agents, emulsifiers, salts for influencing osmotic pressure, buffers, coloring, flavoring and/or aromatic substances and the like which do not deleteriously react with the active agents.

-57-

The composition, if desired, can also contain minor amounts of wetting or emulsifying agents, or pH buffering agents. The composition can be a liquid solution, suspension, emulsion, tablet, pill, capsule, sustained release formulation, or powder. The composition can be formulated as a suppository, with traditional binders and
5 carriers such as triglycerides. Oral formulation can include standard carriers such as pharmaceutical grades of mannitol, lactose, starch, magnesium stearate, polyvinyl pyrrolidone, sodium saccharine, cellulose, magnesium carbonate, etc.

Methods of introduction of these compositions include, but are not limited to, intradermal, intramuscular, intraperitoneal, intraocular, intravenous, subcutaneous,
10 topical, oral and intranasal. Other suitable methods of introduction can also include gene therapy (as described below), rechargeable or biodegradable devices, particle acceleration devices ("gene guns") and slow release polymeric devices. The pharmaceutical compositions of this invention can also be administered as part of a combinatorial therapy with other agents.

15 The composition can be formulated in accordance with the routine procedures as a pharmaceutical composition adapted for administration to human beings. For example, compositions for intravenous administration typically are solutions in sterile isotonic aqueous buffer. Where necessary, the composition may also include a solubilizing agent and a local anesthetic to ease pain at the site of the injection.
20 Generally, the ingredients are supplied either separately or mixed together in unit dosage form, for example, as a dry lyophilized powder or water free concentrate in a hermetically sealed container such as an ampule or sachette indicating the quantity of active agent. Where the composition is to be administered by infusion, it can be dispensed with an infusion bottle containing sterile pharmaceutical grade water, saline
25 or dextrose/water. Where the composition is administered by injection, an ampule of sterile water for injection or saline can be provided so that the ingredients may be mixed prior to administration.

For topical application, nonsprayable forms, viscous to semi-solid or solid forms comprising a carrier compatible with topical application and having a dynamic
30 viscosity preferably greater than water, can be employed. Suitable formulations include but are not limited to solutions, suspensions, emulsions, creams, ointments,

powders, enemas, lotions, sols, liniments, salves, aerosols, etc., which are, if desired, sterilized or mixed with auxiliary agents, *e.g.*, preservatives, stabilizers, wetting agents, buffers or salts for influencing osmotic pressure, etc. The agent may be incorporated into a cosmetic formulation. For topical application, also suitable are
5 sprayable aerosol preparations wherein the active ingredient, preferably in combination with a solid or liquid inert carrier material, is packaged in a squeeze bottle or in admixture with a pressurized volatile, normally gaseous propellant, *e.g.*, pressurized air.

Agents described herein can be formulated as neutral or salt forms.

10 Pharmaceutically acceptable salts include those formed with free amino groups such as those derived from hydrochloric, phosphoric, acetic, oxalic, tartaric acids, etc., and those formed with free carboxyl groups such as those derived from sodium, potassium, ammonium, calcium, ferric hydroxides, isopropylamine, triethylamine, 2-ethylamino ethanol, histidine, procaine, etc.

15 The agents are administered in a therapeutically effective amount. The amount of agents which will be therapeutically effective in the treatment of a particular disorder or condition will depend on the nature of the disorder or condition, and can be determined by standard clinical techniques. In addition, *in vitro* or *in vivo* assays may optionally be employed to help identify optimal dosage ranges. The
20 precise dose to be employed in the formulation will also depend on the route of administration, and the seriousness of the symptoms, and should be decided according to the judgment of a practitioner and each patient's circumstances. Effective doses may be extrapolated from dose-response curves derived from *in vitro* or animal model test systems.

25 The invention also provides a pharmaceutical pack or kit comprising one or more containers filled with one or more of the ingredients of the pharmaceutical compositions of the invention. Optionally associated with such container(s) can be a notice in the form prescribed by a governmental agency regulating the manufacture, use or sale of pharmaceuticals or biological products, which notice reflects approval
30 by the agency of manufacture, use or sale for human administration. The pack or kit can be labeled with information regarding mode of administration, sequence of drug

-59-

administration (*e.g.*, separately, sequentially or concurrently), or the like. The pack or kit may also include means for reminding the patient to take the therapy. The pack or kit can be a single unit dosage of the combination therapy or it can be a plurality of unit dosages. In particular, the agents can be separated, mixed together in any
5 combination, present in a single vial or tablet. Agents assembled in a blister pack or other dispensing means is preferred. For the purpose of this invention, unit dosage is intended to mean a dosage that is dependent on the individual pharmacodynamics of each agent and administered in FDA approved dosages in standard time courses.

10 METHODS OF THERAPY

The present invention also pertains to methods of treatment (prophylactic and/or therapeutic) for MI or a susceptibility to MI, using an MI therapeutic agent. An "MI therapeutic agent" is an agent that alters (*e.g.*, enhances or inhibits) FLAP polypeptide activity and/or FLAP nucleic acid expression, as described herein (*e.g.*, a
15 nucleic acid agonist or antagonist). MI therapeutic agents can alter FLAP polypeptide activity or nucleic acid expression by a variety of means, such as, for example, by providing additional FLAP polypeptide or upregulating the transcription or translation of the FLAP nucleic acid; by altering posttranslational processing of the FLAP polypeptide; by altering transcription of FLAP splicing variants; or by interfering with
20 FLAP polypeptide activity (*e.g.*, by binding to a FLAP polypeptide), or by downregulating the transcription or translation of a FLAP nucleic acid.

Representative MI therapeutic agents include the following:

nucleic acids or fragments or derivatives thereof described herein, particularly
25 nucleotides encoding the polypeptides described herein and vectors comprising such nucleic acids (*e.g.*, a gene, nucleic acid, cDNA, and/or mRNA, such as a nucleic acid encoding a member of the leukotriene pathway, such as a FLAP polypeptide or active fragment or derivative thereof, or an oligonucleotide; for example, one of SEQ ID Nos. 1 or 3 or the
30 complement thereof, or a nucleic acid encoding SEQ ID NO: 2, or fragments or derivatives thereof);

-60-

polypeptides described herein and/or other splicing variants encoded by a FLAP nucleic acid, or fragments or derivatives thereof);

- 5 other polypeptides (*e.g.*, receptors of members of the leukotriene pathway, such as LTB₄ receptors, LTC₄ receptors, LTD₄ receptors, Cys LT₁ receptors, Cys LT₂ receptors); binding agents of the leukotriene pathway, such as FLAP binding agents (*e.g.*, 5-LO); peptidomimetics; fusion proteins or prodrugs thereof; antibodies (*e.g.*, an antibody to an altered FLAP polypeptide, or an
- 10 antibody to a non-altered FLAP polypeptide, or an antibody to a particular splicing variant encoded by a FLAP nucleic acid, as described above); ribozymes; other small molecules; and
- other agents that alter (*e.g.*, enhance or inhibit) a member of the leukotriene
- 15 pathway gene expression, such as FLAP nucleic acid expression or polypeptide activity, or that regulate transcription of FLAP splicing variants (*e.g.*, agents that affect which splicing variants are expressed, or that affect the amount of each splicing variant that is expressed.
- 20 More than one MI therapeutic agent can be used concurrently, if desired.

An MI nucleic acid therapeutic agent that is a nucleic acid is used in the treatment of a susceptibility to MI. The term, "treatment" as used herein, refers not only to ameliorating symptoms associated with the disease, but also preventing or

25 delaying the onset of the disease, and also lessening the severity or frequency of symptoms of the disease. The therapy is designed to alter (*e.g.*, inhibit or enhance), replace or supplement activity of a FLAP polypeptide in an individual. For example, an MI nucleic acid therapeutic agent can be administered in order to upregulate or increase the expression or availability of the FLAP nucleic acid or of specific splicing

30 variants of FLAP nucleic acid, or, conversely, to downregulate or decrease the expression or availability of the FLAP nucleic acid or specific splicing variants of the

FLAP nucleic acid. Upregulation or increasing expression or availability of a native FLAP nucleic acid or of a particular splicing variant could interfere with or compensate for the expression or activity of a defective nucleic acid or another splicing variant; downregulation or decreasing expression or availability of a native
5 FLAP nucleic acid or of a particular splicing variant could minimize the expression or activity of a defective nucleic acid or the particular splicing variant and thereby minimize the impact of the defective nucleic acid or the particular splicing variant.

The MI therapeutic agent(s) are administered in a therapeutically effective amount (*i.e.*, an amount that is sufficient to treat the disease, such as by ameliorating
10 symptoms associated with the disease, preventing or delaying the onset of the disease, and/or also lessening the severity or frequency of symptoms of the disease). The amount which will be therapeutically effective in the treatment of a particular individual's disorder or condition will depend on the symptoms and severity of the disease, and can be determined by standard clinical techniques. In addition, *in vitro*
15 or *in vivo* assays may optionally be employed to help identify optimal dosage ranges. The precise dose to be employed in the formulation will also depend on the route of administration, and the seriousness of the disease or disorder, and should be decided according to the judgment of a practitioner and each patient's circumstances. Effective doses may be extrapolated from dose-response curves derived from *in vitro*
20 or animal model test systems.

In one embodiment, a nucleic acid of the invention (*e.g.*, a nucleic acid encoding a FLAP polypeptide, such as one of SEQ ID NO: 1 or 3 or the complement thereof; or another nucleic acid that encodes a FLAP polypeptide or a splicing variant, derivative or fragment thereof, such as a nucleic acid encoding SEQ ID NO: 2, can be
25 used, either alone or in a pharmaceutical composition as described above. For example, a FLAP nucleic acid or a cDNA encoding a FLAP polypeptide, either by itself or included within a vector, can be introduced into cells (either *in vitro* or *in vivo*) such that the cells produce native FLAP polypeptide. If necessary, cells that have been transformed with the nucleic acid or cDNA or a vector comprising the
30 nucleic acid or cDNA can be introduced (or re-introduced) into an individual affected with the disease. Thus, cells which, in nature, lack native FLAP expression and

activity, or have altered FLAP expression and activity, or have expression of a disease-associated FLAP splicing variant, can be engineered to express the FLAP polypeptide or an active fragment of the FLAP polypeptide (or a different variant of the FLAP polypeptide). In a preferred embodiment, nucleic acid encoding a FLAP polypeptide, or an active fragment or derivative thereof, can be introduced into an expression vector, such as a viral vector, and the vector can be introduced into appropriate cells in an animal. Other nucleic acid transfer systems, including viral and nonviral transfer systems, can be used. Alternatively, nonviral nucleic acid transfer methods, such as calcium phosphate coprecipitation, mechanical techniques (e.g., microinjection); membrane fusion-mediated transfer via liposomes; or direct DNA uptake, can also be used.

Alternatively, in another embodiment of the invention, a nucleic acid of the invention; a nucleic acid complementary to a nucleic acid of the invention; or a portion of such a nucleic acid (e.g., an oligonucleotide as described below), can be used in "antisense" therapy, in which a nucleic acid (e.g., an oligonucleotide) which specifically hybridizes to the mRNA and/or genomic DNA of an MI nucleic acid is administered or generated *in situ*. The antisense nucleic acid that specifically hybridizes to the mRNA and/or DNA inhibits expression of the FLAP polypeptide, e.g., by inhibiting translation and/or transcription. Binding of the antisense nucleic acid can be by conventional base pair complementarity, or, for example, in the case of binding to DNA duplexes, through specific interaction in the major groove of the double helix.

An antisense construct of the present invention can be delivered, for example, as an expression plasmid as described above. When the plasmid is transcribed in the cell, it produces RNA that is complementary to a portion of the mRNA and/or DNA that encodes the FLAP polypeptide. Alternatively, the antisense construct can be an oligonucleotide probe that is generated *ex vivo* and introduced into cells; it then inhibits expression by hybridizing with the mRNA and/or genomic DNA of the FLAP. In one embodiment, the oligonucleotide probes are modified oligonucleotides that are resistant to endogenous nucleases, e.g., exonucleases and/or endonucleases, thereby rendering them stable *in vivo*. Exemplary nucleic acid molecules for use as

-63-

antisense oligonucleotides are phosphoramidate, phosphothioate and methylphosphonate analogs of DNA (see also U.S. Pat. Nos. 5,176,996, 5,264,564 and 5,256,775). Additionally, general approaches to constructing oligomers useful in antisense therapy are also described, for example, by Van der Krol *et al.*

5 (*Biotechniques* 6:958-976 (1988)); and Stein *et al.* (*Cancer Res.* 48:2659-2668 (1988)). With respect to antisense DNA, oligodeoxyribonucleotides derived from the translation initiation site are preferred.

To perform antisense therapy, oligonucleotides (mRNA, cDNA or DNA) are designed that are complementary to mRNA encoding the FLAP. The
10 antisense oligonucleotides bind to FLAP mRNA transcripts and prevent translation. Absolute complementarity, although preferred, is not required. A sequence “complementary” to a portion of an RNA, as referred to herein, indicates that a sequence has sufficient complementarity to be able to hybridize with the RNA, forming a stable duplex; in the case of double-stranded antisense nucleic acids, a
15 single strand of the duplex DNA may thus be tested, or triplex formation may be assayed. The ability to hybridize will depend on both the degree of complementarity and the length of the antisense nucleic acid, as described in detail above. Generally, the longer the hybridizing nucleic acid, the more base mismatches with an RNA it may contain and still form a stable duplex (or triplex, as the case may be). One
20 skilled in the art can ascertain a tolerable degree of mismatch by use of standard procedures.

The oligonucleotides used in antisense therapy can be DNA, RNA, or chimeric mixtures or derivatives or modified versions thereof, single-stranded or double-stranded. The oligonucleotides can be modified at the base moiety, sugar
25 moiety, or phosphate backbone, for example, to improve stability of the molecule, hybridization, etc. The oligonucleotides can include other appended groups such as peptides (*e.g.* for targeting host cell receptors *in vivo*), or agents facilitating transport across the cell membrane (see, *e.g.*, Letsinger *et al.*, *Proc. Natl. Acad. Sci. USA* 86:6553-6556 (1989); Lemaitre *et al.*, *Proc. Natl. Acad. Sci. USA* 84:648-652 (1987);
30 PCT International Publication No. WO 88/09810) or the blood-brain barrier (see, *e.g.*, PCT International Publication No. WO 89/10134), or hybridization-triggered cleavage

agents (see, *e.g.*, Krol *et al.*, *BioTechniques* 6:958-976 (1988)) or intercalating agents. (See, *e.g.*, Zon, *Pharm.Res.* 5: 539-549 (1988)). To this end, the oligonucleotide may be conjugated to another molecule (*e.g.*, a peptide, hybridization triggered cross-linking agent, transport agent, hybridization-triggered cleavage agent).

5 The antisense molecules are delivered to cells that express FLAP *in vivo*. A number of methods can be used for delivering antisense DNA or RNA to cells; *e.g.*, antisense molecules can be injected directly into the tissue site, or modified antisense molecules, designed to target the desired cells (*e.g.*, antisense linked to peptides or antibodies that specifically bind receptors or antigens expressed on the target cell
10 surface) can be administered systematically. Alternatively, in a preferred embodiment, a recombinant DNA construct is utilized in which the antisense oligonucleotide is placed under the control of a strong promoter (*e.g.*, pol III or pol II). The use of such a construct to transfect target cells in the patient results in the transcription of sufficient amounts of single stranded RNAs that will form
15 complementary base pairs with the endogenous FLAP transcripts and thereby prevent translation of the FLAP mRNA. For example, a vector can be introduced *in vivo* such that it is taken up by a cell and directs the transcription of an antisense RNA. Such a vector can remain episomal or become chromosomally integrated, as long as it can be transcribed to produce the desired antisense RNA. Such vectors can be constructed
20 by recombinant DNA technology methods standard in the art and described above. For example, a plasmid, cosmid, YAC or viral vector can be used to prepare the recombinant DNA construct that can be introduced directly into the tissue site. Alternatively, viral vectors can be used which selectively infect the desired tissue, in which case administration may be accomplished by another route (*e.g.*, systemically).

25 Endogenous FLAP expression can also be reduced by inactivating or “knocking out” FLAP or its promoter using targeted homologous recombination (*e.g.*, see Smithies *et al.*, *Nature* 317:230-234 (1985); Thomas & Capecchi, *Cell* 51:503-512 (1987); Thompson *et al.*, *Cell* 5:313-321 (1989)). For example, an altered, non-functional FLAP (or a completely unrelated DNA sequence) flanked by DNA
30 homologous to the endogenous FLAP (either the coding regions or regulatory regions of FLAP) can be used, with or without a selectable marker and/or a negative

-65-

selectable marker, to transfect cells that express the FLAP *in vivo*. Insertion of the DNA construct, via targeted homologous recombination, results in inactivation of the FLAP. The recombinant DNA constructs can be directly administered or targeted to the required site *in vivo* using appropriate vectors, as described above. Alternatively, 5 expression of non-altered FLAPs can be increased using a similar method: targeted homologous recombination can be used to insert a DNA construct comprising a non-altered functional FLAP, or the complement thereof, or a portion thereof, in place of an altered FLAP in the cell, as described above. In another embodiment, targeted homologous recombination can be used to insert a DNA construct comprising a 10 nucleic acid that encodes an MI polypeptide variant that differs from that present in the cell.

Alternatively, endogenous FLAP expression can be reduced by targeting deoxyribonucleotide sequences complementary to the regulatory region of a FLAP (*i.e.*, the FLAP promoter and/or enhancers) to form triple helical structures that 15 prevent transcription of the FLAP in target cells in the body. (See generally, Helene, C., *Anticancer Drug Des.*, 6(6):569-84 (1991); Helene, C. *et al.*, *Ann. N.Y. Acad. Sci.* 660:27-36 (1992); and Maher, L. J., *Bioassays* 14(12):807-15 (1992)). Likewise, the antisense constructs described herein, by antagonizing the normal biological activity of one of the FLAP proteins, can be used in the manipulation of tissue, *e.g.*, tissue 20 differentiation, both *in vivo* and *for ex vivo* tissue cultures. Furthermore, the antisense techniques (*e.g.*, microinjection of antisense molecules, or transfection with plasmids whose transcripts are anti-sense with regard to an MI nucleic acid RNA or nucleic acid sequence) can be used to investigate the role of FLAP in normal cellular function. Such techniques can be utilized in cell culture, but can also be used in the 25 creation of transgenic animals.

In yet another embodiment of the invention, other MI therapeutic agents as described herein can also be used in the treatment or prevention of a susceptibility to a disease or condition associated with FLAP. The therapeutic agents can be delivered in a composition, as described above, or by themselves. They can be administered 30 systemically, or can be targeted to a particular tissue. The therapeutic agents can be produced by a variety of means, including chemical synthesis; recombinant

-66-

production; *in vivo* production (*e.g.*, a transgenic animal, such as U.S. Pat. No. 4,873,316 to Meade *et al.*), for example, and can be isolated using standard means such as those described herein.

A combination of any of the above methods of treatment (*e.g.*, administration
5 of non-altered FLAP polypeptide in conjunction with antisense therapy targeting altered FLAP mRNA; administration of a first splicing variant encoded by a FLAP in conjunction with antisense therapy targeting a second splicing encoded by a FLAP) can also be used.

The present invention is now illustrated by the following Exemplification,
10 which is not intended to be limiting in any way.

EXEMPLIFICATION

SUBJECTS AND METHODS

Study population

15 Patients entering the study were defined from an infarction registry that includes all MIs (over 8,000 patients) in Iceland 1981-2000. This registry is a part of the World Health Organization MONICA Project (The World Health Organization MONICA Project (monitoring trends and determinants in cardiovascular disease): a major international collaboration. WHO MONICA Project Principal Investigators. *J*
20 *Clin. Epidemiol.* 1988; 41:105-14). Diagnosis of all patients in the registry follow strict diagnostic rules based on symptoms, electrocardiograms, cardiac enzymes, and necropsy findings.

Blood samples from 1342 MI patients, both cases with a family history and sporadic cases were collected. For each patient that participated, blood was collected
25 from 2 relatives (unaffected or affected). Their genotypes were used to help with construction of haplotypes. In addition, blood samples from 624 unrelated controls were collected.

-67-

Linkage analysis

Extended families (pedigrees) by clustering related female MI patients were constructed into families such that each patient is related to at least one other patient within and including six meiotic events. The information regarding the relatedness of patients was obtained from an encrypted genealogy database that covers the entire Icelandic nation (Gulcher *et al.*, *Eur. J. Hum. Genet.* 8: 739-742 (2000)). A genomewide scan was performed using a framework map of 1000 microsatellite markers, using protocols described elsewhere (Gretarsdottir S., *et al. Am. J. Hum. Genet.*, 70: 593-603, 2002)). The marker order and positions were obtained from a modified version of the Marshfield genetic map (Center for Medical Genetics, Marshfield Medical Research Foundation), using genetic mapping based on our own data, and from deCODE genetic's high resolution genetic map (Kong A., *et al.*, *Nat. genet.*, 31: 241-247 (2002)). The population-based allele frequencies were constructed from a cohort of more than 30,000 Icelanders who have participated in genetic studies of various disease projects. Additional markers were genotyped within the locus on chromosome 13 to increase the information on identity by descent within the families. For those markers at least 180 Icelandic controls were genotyped to derive the population allele frequencies.

For statistical analysis, multipoint, affected only allele-sharing methods were used to assess evidence for linkage. All results, both the LOD and the non-parametric linkage (NPL) score, were obtained using the program ALLEGRO (Gudbjartsson D.F., *et al.*, *Nat Genet.*, 25: 12-13(2000)). The baseline linkage analysis (Gretarsdottir S., *et al.*, *Am. J. Hum. Genet.* 70: 593-603, (2002)) uses the Spairs scoring function (Whittemore AS, and Haplern J A., *Biometrics* 50: 118-127 (1994)) and Kruglyak *et al.*, *Am. J. Hum. Genet.*, 58:1347-1363 (1996)) the exponential allele-sharing model (Kong A., and Cox N.J., *Am. J. Hum. Genet.* 61:1179-1188 (1997)), and a family weighting scheme which is halfway, on the log-scale, between weighing each affected pairs equally and weighing each family equally.

Ultra-fine mapping and haplotype analysis

A candidate susceptibility locus was defined as the region under the LOD score curve where the score was one lower than the highest lod score ((peak lod score -1)\one lod drop). This region (approx. 12Mb) was ultra-finemapped with
5 microsatellite markers with an average spacing between markers of less than 100kb. All usable microsatellite markers that found in public databases and mapped within that region were used. In addition, microsatellite markers identified within the deCODE genetics sequence assembly of the human genome were used.

10 *Haplotype analysis*

The frequencies of haplotypes in the patient and the control groups using an expectation-maximization algorithm were estimated (Dempster A.P. *et al.*, *J. R. Stat. Soc. B.* 39: 1-389 (1977)). An implementation of this algorithm that can handle missing genotypes and uncertainty with the phase was used. Under the null
15 hypothesis, the patients and the controls are assumed to have identical frequencies. Using a likelihood approach, an alternative hypothesis where a candidate at-risk-haplotype is allowed to have a higher frequency in patients than controls, while the ratios of the frequencies of other haplotypes are assumed to be the same in both groups was tested. Likelihoods are maximized separately under both hypothesis and a
20 corresponding 1-df likelihood ratio statistics is used to evaluate the statistic significance.

To look for at-risk-haplotypes in the 1-lod drop, association of all possible combinations of genotyped markers was studied, provided those markers spanned a region of size less than 1000 kb. Due to a certain amount of testing, the *p*-values were
25 adjusted using simulations. The combined patient and control groups were randomly divided into two sets, equal in size to the original group of patients and controls. The haplotype analysis was then repeated and the most significant *p*-value registered was observed. This randomisation scheme was repeated over 100 times to construct an empirical distribution of *p*-values.

SNP haplotype association to MI

In an effort to identify SNP haplotypes that associate with MI we have typed SNPs identified mainly by sequencing the FLAP gene and the region flanking the gene. We genotyped a total number of 45 SNPs in 1343 patients and 624 unrelated
5 controls. The largest subset of unrelated patients (related no closer than 4 meioses) was 921. We observed two correlated series of SNP haplotypes in excess in patients, denoted as A and B in Table 7. The length of the haplotypes varies between 33 and 69 Kb and cover one or two blocks of linkage disequilibrium. Both series of haplotypes contain the common allele 2 of the SNP SG13S25. All haplotypes in the
10 A series contain the SNP DG00AAHID, while all haplotypes in the B series contain the SNP DG00AAHII. In the B series, the haplotypes B4, B5, and B6 have a relative risk (RR) greater than 2 and allelic frequencies above 10% (Table 1). The haplotypes in the A series have slightly lower RR and p-values, but higher allelic frequency (15-16%), and as such we also consider them interesting. The haplotypes in series B and
15 A are strongly correlated, *i.e.* the B haplotypes define a subset of the A haplotypes. Hence, B haplotypes are more specific than A haplotypes. However, A haplotypes are more sensitive, *i.e.* they capture more individuals with the putative mutation, as is observed in the population attributable risk which is less for B than for A. Furthermore, these haplotypes show similar risk ratios and allelic frequency for early-
20 onset patients (defined as onset of first MI before the age of 55). In addition, analyzing various groups of patients with known risk factors, such as hypertension, high cholesterol, smoking and diabetes, did not reveal any significant correlation with these haplotypes.

In conclusion, we have identified a series of correlated MI disease risk
25 haplotypes, consisting of 4-6 SNPs, with relative risk greater than 2 and allelic frequency in MI patients greater than 10%. The length of the haplotypes varies between 39-68 kb. These haplotypes are carried by 19% (B5) to 29% (A4) of MI patients. Our results suggest that the 'at risk' haplotypes in the FLAP gene represent a new major independent risk factor for MI.

Discussion

In a genome wide search for susceptibility nucleic acids for MI, a locus to 13q12 was mapped. This locus was ultra-fine mapped with microsatellite markers.
5 Haplotype analysis strongly suggested a nucleic acid for FLAP (ALOX5AP), as a susceptibility gene for MI.

The FLAP gene encodes for a protein that is required for leukotriene synthesis (LTA4, LTB4, LTC4, LTD4). Inhibitors of its function impede translocation of 5-lipoxygenase from the cytoplasm to the cell membrane and inhibit activation of 5-
10 lipoxygenase. The leukotrienes are potent inflammatory lipid mediators derived from arachidonic acid that can potentially contribute to development of atherosclerosis and destabilization of atherosclerotic plaques through lipid oxidation and/or proinflammatory effects. Allen *et al.*, (*Circulation*. 97: 2406-2413(1998)) described a novel mechanism in which atherosclerosis is associated with the appearance of a
15 leukotriene receptor(s) capable of inducing hyperreactivity of human epicardial coronary arteries in response to LTC4 and LTD4. Allen *et al.* show a photomicrograph of a section of human atherosclerotic coronary artery a positive staining of a number of members of the leukotriene pathway, including FLAP. Mehrabian *et al.* described the identification of 5-Lipoxygenase (5-LO) as a major
20 gene contributing to atherosclerosis susceptibility in mice. Mehrabian *et al.* described that heterozygous deficiency for the enzyme in a knockout model decreased the atherosclerotic lesion size in LDL^{-/-} mice by about 95%. Mehrabian *et al.* show that the enzyme is expressed abundantly in macrophage-rich regions of atherosclerotic lesions, and suggested that 5-LO and/or its products might act locally to promote
25 lesion development (Mehrabian *et al.*, *Circulation Research*. 91:120 (2002)).

Studies of FLAP inhibition in animal models of atherosclerosis are scarce. However, in a rabbit model of acute MI assessed 72 hours after coronary artery ligation the FLAP-inhibitor BAYx1005 markedly reduced mortality, from 65% to 25%, and blocked the increase in CPK and neutrophil accumulation as well as the
30 ECG-changes observed in sham treated animals (*J. Pharmacol. Exp. Ther.*, 276:332 (1996)).

Mutations and /or polymorphisms within the FLAP nucleic acid, and other members of the same pathway (*i.e.*, 5-lipoxygenase, LTA4, LTB4, LTC4, and CysLT2 receptor), that show association with the disease, can be used as a diagnostic test. The members of the 5-LO pathway in particular are valuable therapeutic targets for myocardial infarction.

Table 1 The marker map for chromosome 13 used in the linkage analysis.

Location (cM)	Marker	Location (cM)	Marker
6	D13S175	63.9	D13S170
9.8	D13S1243	68.7	D13S265
13.5	D13S1304	73	D13S167
17.2	D13S217	76.3	D13S1241
21.5	D13S289	79.5	D13S1298
25.1	D13S171	81.6	D13S1267
28.9	D13S219	84.7	D13S1256
32.9	D13S218	85.1	D13S158
38.3	D13S263	87	D13S274
42.8	D13S326	93.5	D13S173
45.6	D13S153	96.7	D13S778
49.4	D13S1320	102.7	D13S1315
52.6	D13S1296	110.6	D13S285
55.9	D13S156	115	D13S293
59.8	D13S1306		

Table 2 Marker Map for the second step of Linkage Analysis

Location (cM)	Marker	Location (cM)	Marker
1.758	D13S175	42.585	D13S1248
9.235	D13S787	44.288	D13S1233
11.565	D13S1243	44.377	D13S263
16.898	D13S221	45.535	D13S325
17.454	D13S1304	45.536	D13S1270
18.011	D13S1254	45.537	D13S1276
18.59	D13S625	49.149	D13S326
19.308	D13S1244	49.532	D13S1272
19.768	D13S243	52.421	D13S168
22.234	D13S1250	52.674	D13S287
22.642	D13S1242	60.536	D13S1320
22.879	D13S217	64.272	D13S1296
25.013	D13S1299	71.287	D13S156
28.136	D13S289	76.828	D13S1306
28.678	D13S290	77.86	D13S170
29.134	D13S1287	82.828	D13S265
30.073	D13S260	91.199	D13S1241
31.98	D13S171	93.863	D13S1298
32.859	D13S267	97.735	D13S779
33.069	D13S1293	100.547	D13S1256
33.07	D13S620	102.277	D13S274
34.131	D13S220	111.885	D13S173
36.427	D13S219	112.198	D13S796
39.458	D13S1808	115.619	D13S778
40.441	D13S218	119.036	D13S1315
41.113	D13S1288	126.898	D13S285
41.996	D13S1253	131.962	D13S293

Table 3 shows the five exons with positions that encode the FLAP protein, markers and SNPs identified within the genomic sequence by the methods described herein. Of the six SNPs, one SNP, B_SNP_302465, is in the coding region. The polymorphism, SNP 302465, does not change the amino acid sequence in the protein.

5

Table 3

Exons/markers/SNPs	Position(bp)	Size(bp)	SNPs
D13S289	249198-249445	248	
DG13S166	249855-250249	395	
Exon1	293667-293736	70	
Exon2	302413-302512	100	
B_SNP_302465	302465	1	heterozygous C-T (3%)
B_SNP_302524	302524	1	heterozygous A-C (55%)
			homozygous A-A (22.5%)
			homozygous C-C (22.5%)
B_SNP_302560	302560	1	heterozygous A-G (2%)
B_SNP_302617	302617	1	heterozygous C-T (37%)
			homozygous T-T (59%)
			homozygous C-C (4%)
Exon3	310405-310475	71	
B_SNP_310657	310657	1	heteroygous A-G (6%)
Exon4	314297-314378	82	
B_SNP_314500	314500	1	heterozygous G-C (24%)
			homozygous C-C (6%)
			Homozygous G-G (70%)
Exon5	322297-322459	163	
DG13S164	330669-330886	218	
D13S1238	330679-330831	153	

-74-

DG13S163	363743-363904	162	
SNP13B_R1028729		1	
(rs1028729)	145600		homozygous C-C (11%),
			heterozygous C-T (41%),
			homozygous T-T (47%)
SNP13B_Y1323898		1	
(rs1323898)*	151047		homozygous G-G (38%)
			heterozygous G-A (47%)
			homozygous A-A (15%)
SNP13B_K912392		1	
(rs912392)*	193119		homozygous C-C (13%)
			heterozygous C-T (46%)
			homozygous T-T (41%)
DG00AAFQR		1	
(rs1556428)*	117676		homozygous G-G (1%)
			heterozygous G-A (18%)
			homozygous A-A (80%)
DG00AAFIV		1	
(rs22485654)*	227629		homozygous T-T (75%)
			heterozygous T-A (23%)
			homozygous A-A (2%)
DG00AFJT	293754	1	Homozygous C-C (45%),
			heterozygous C-A (45%),
			homozygous A-A (10%)
DG00AAHII	294503	1	homozygous G-G (44%),
			heterozygous G-A (46%),
			homozygous A-A (10%)
DG00AAHID	296020	1	homozygous T-T (43%),
			heterozygous T-A (45%),
			homozygous A-A (12%)
DG00AAHIJ	298098	1	homozygous G-G (60%),
			heterozygous G-A (35%),
			homozygous A-A (6%)
DG00AAHIH	298188	1	homozygous G-G (32%),
			heterozygous G-A (48%),
			homozygous A-A (19%)

-75-

DG00AAHIE		1	homozygous C-C
(rs3885907)*	298379		(23%),
			heterozygous C-
			A(48%),
			homozygous A-A (29%)
DG00AAHIG	304334	1	homozygous C-C (21%),
			heterozygous C-
			T(49%),
			homozygous T-T (31%)
DG00AAHIF	324849	1	homozygous G-G (54%),
			heterozygous G-
			C(39%),
			homozygous C-C (7%)
DG00AAHOI	325651	1	homozygous G-G (59%),
			heterozygous G-
			A(36%),
			homozygous A-A (5%)
FLA267479	267479	1	
FLA267696	267696	1	
FLA267853	267853	1	
FLA270742	270742	1	
FLA270830	270830	1	
FLA273407	273407	1	
FLA274084	274084	1	
FLA275784	275784	1	
FLA275952	275952	1	
FLA277478	277478	1	
FLA277678	277678	1	
FLA278185	278185	1	
FLA278492	278492	1	
FLA278845	278845	1	
FLA280183	280183	1	
FLA280923	280923	1	
FLA283400	283400	1	
FLA283477/SG13S25	283477	1	
FLA284410	284410	1	
FLA284815	284815	1	
FLA284903	284903	1	
FLA290195	290195	1	
FLA290553	290553	1	
FLA290570	290570	1	
FLA292253	292253	1	
FLA292576	292576	1	
FLA295036	295036	1	
FLA296102	296102	1	

FLA298098	298098	1	
FLA298188	298188	1	
FLA298230	298230	1	
FLA298379	298379	1	
FLA298507	298507	1	
FLA298604	298604	1	
FLA298987	298987	1	
FLA299063	299063	1	
FLA299772	299772	1	
FLA299843	299843	1	
FLA299980	299980	1	
FLA300662	300662	1	
FLA300864	300864	1	
FLA302094	302094	1	
FLA302465	302465	1	
FLA302524	302524	1	
FLA303769	303769	1	
FLA303796	303796	1	
FLA303957	303957	1	
FLA303967	303967	1	
FLA304170	304170	1	
FLA304334	304334	1	
FLA304512	304512	1	
FLA304583	304583	1	
FLA305089	305089	1	
FLA305505	305505	1	
FLA305678	305678	1	
FLA305956	305956	1	
FLA306447	306447	1	
FLA307155	307155	1	
FLA307165	307165	1	
FLA308514	308514	1	
FLA308527	308527	1	
FLA309851	309851	1	
FLA310657	310657	1	
FLA311122	311122	1	
FLA311248	311248	1	
FLA311737	311737	1	
FLA312038	312038	1	
FLA312056/SG13S30	312056	1	
FLA314500	314500	1	
FLA314532	314532	1	
FLA315014	315014	1	
FLA315232	315232	1	
FLA315355	315355	1	

FLA315611	315611	1	
FLA316131	316131	1	
FLA316408	316408	1	
FLA316472	316472	1	
FLA316515	316515	1	
FLA316569	316569	1	
FLA316607	316607	1	
FLA316763/SG13S32	316763	1	
FLA317496	317496	1	
FLA317619	317619	1	
FLA317620	317620	1	
FLA317647	317647	1	
FLA317733	317733	1	
FLA317744	317744	1	
FLA317815	317815	1	
FLA318219	318219	1	
FLA319969	319969	1	
FLA320261	320261	1	
FLA320393/SG13S42	320393	1	
FLA320595	320595	1	
FLA321774	321774	1	
FLA321966	321966	1	
FLA322025	322025	1	
FLA322093	322093	1	
FLA323013	323013	1	
FLA323316/SG13S34	323316	1	
FLA323366	323366	1	
FLA324591	324591	1	
FLA324601	324601	1	
FLA324849	324849	1	
FLA325369	325369	1	
FLA326187	326187	1	
FLA326657	326657	1	
FLA327265	327265	1	
FLA328964	328964	1	
FLA330265	330265	1	
FLA330455	330455	1	
FLA331234	331234	1	
FLA331374	331374	1	
FLA331395	331395	1	
FLA331473	331473	1	
FLA331517	331517	1	
FLA331526	331526	1	
FLA331651	331651	1	
FLA331841	331841	1	

-78-

FLA287889/DG00AAJFF	287889	1	
DG00AAFIU/SNP_13_Y1323892	256047	1	
SG13S35/FLA324333	324333	1	
SG13S86	305031	1	
* indicates a publicly available SNP.			

Table 4

Most significant 4 microsatellite marker haplotypes. Length=length of haplotype in Mb. P-val=p-value. RR=Relative risk. N af=Number of patients. P al=allelic frequency of haplotype. P ca=carrier frequency of haplotype. N ct= number of controls. Alleles= alleles in the haplotype. Markers= markers in the haplotype.

4 markers:		pos.rr-frqgt1perc								Alleles				Markers
length	p-val	RR	N af	P al	P ca	N ct	P al	P ca	s					
0.88	4.71E-06	6.23	428	0.065	0.125	721	0.011	0.022	0	-12	-6	0		DG13S80 DG13S83 DG13S1110 DG13S163
0.82	8.60E-06	INF	438	0.032	0.062	720	0	0	0	4	2	14		DG13S111 1 DG13S1103 D13S1287 DG13S1061
0.67	6.98E-06	19.9 1	435	0.03	0.059	721	0.002	0.003	8	6	0	8		DG13S1103 DG13S163 D13S290 DG13S1061
0.767	4.85E-06	26.7 2	436	0.048	0.094	721	0.002	0.004	0	0	2	12		DG13S1101 DG13S166 D13S1287 DG13S1061
0.515	1.93E-06	INF	422	0.048	0.094	721	0	0	2	0	0	6		DG13S166 DG13S163 D13S290 DG13S1061
0.864	1.68E-06	INF	424	0.024	0.048	717	0	0	0	2	0	16		DG13S166 DG13S163 -DG13S1061 DG13S293
0.927	5.38E-06	INF	435	0.034	0.067	720	0	0	4	2	14	3		DG13S1103 D13S1287 DG13S1061 DG13S301

Table 5

Most significant 5 microsatellite marker haplotypes. Length=length of haplotype in Mb. P-val=p-value. RR=Relative risk. N af=Number of patients. P al=allelic frequency of haplotype. P ca =carrier frequency of haplotype. N ct= number of controls. Alleles= alleles in the haplotype. Markers= markers in the haplotype

[illegible]

-80-

																DG13S1061
																DG13S89 DG13S1103 DG13S163 D13S290 DG13S1061
0.841	9.67E-07	INF	435	0.029	0.057	721	0	0	0	8	6	0	8			DG13S87 DG13S1103 DG13S166 D13S1287 DG13S1061
0.982	7.90E-06	18.63	437	0.026	0.052	721	0.001	0.003	0	4	0	2	14			DG13S89 DG13S1101 DG13S166 D13S1287 DG13S1061
0.841	3.52E-06	28.52	436	0.048	0.094	721	0.002	0.004	0	0	0	2	12			DG13S175 DG13S1103 DG13S163 D13S290 DG13S1061
0.705	5.28E-06	INF	435	0.027	0.053	721	0	0	0	8	6	0	8			DG13S89 DG13S166 DG13S163 D13S290 DG13S1061
0.841	4.21E-06	INF	422	0.048	0.093	721	0	0	0	2	0	0	6			DG13S1101 DG13S175 DG13S166 D13S1287 DG13S1061
0.767	4.02E-06	28.11	436	0.049	0.095	721	0.002	0.004	0	0	0	2	12			DG13S1101 DG13S172 DG13S166 D13S1287 DG13S1061
0.767	1.29E-06	31.07	436	0.047	0.092	721	0.002	0.003	0	0	0	2	12			DG13S175 DG13S166 DG13S163 D13S290 DG13S1061
0.705	4.25E-07	INF	422	0.048	0.093	721	0	0	0	2	0	0	6			DG13S172 DG13S1103 DG13S166 D13S1287 DG13S1061
0.683	6.58E-06	INF	437	0.029	0.056	721	0	0	0	4	0	2	14			DG13S1101 DG13S166 D13S290 D13S1287 DG13S1061
0.767	2.85E-06	32.43	436	0.044	0.087	721	0.001	0.003	0	0	0	2	12			D13S289 DG13S166 DG13S163 D13S1287 DG13S293
0.865	9.58E-06	18.39	451	0.023	0.045	739	0.001	0.003	0	0	2	2	-16			D13S289 DG13S166 DG13S163 DG13S1061 DG13S293
0.865	5.08E-06	INF	453	0.019	0.038	739	0	0	0	0	2	0	-16			DG13S1103 DG13S166 D13S1287 DG13S1061 DG13S301
0.927	1.02E-07	27.65	437	0.037	0.073	721	0.001	0.003	4	0	2	14	3			

Table 6

Position (Mb) of microsatellite markers sequence assembly (SA5), primers and size of the markers.

mb	marker	forward	reverse	size
25.09 2042	DG13S2101	ACGGTGATGACGCCTACATT (SEQ ID NO: 4)	TCACATGGACCAATTACCTAGA A(SEQ ID NO: 5)	188
25.09 2042	DG13S48	CAAATTTTCAGATGTGCCAACC (SEQ ID NO: 6)	ACGGTGATGACGCCTACATT(S EQ ID NO: 7)	214
25.39 6504	D13S1304	ACCAGCCTTTGCTTAGGA(SEQ ID NO: 8)	ACATTCTAGTGCTACAGGGTA CTC(SEQ ID NO: 9)	133
25.39 6535	DG13S2105	TGTTCTGCACACGAACATTCT(SE Q ID NO: 10)	TCCTGAGTCCTCTCCACCTG(S EQ ID NO: 11)	104
25.44 5511	DG13S2106	TGGGAATTAATGAAGAACAACAA A(SEQ ID NO: 12)	CATGTTTCGAAGAACTCAAGA GG(SEQ ID NO: 13)	428
25.54 4920	D13S1254	AAATTACTTCATCTTGACGATAAC A(SEQ ID NO: 14)	CTATTGGGGACTGCAGAGAG (SEQ ID NO: 15)	218
25.54 4925	DG13S2107	GGGACTGCAGAGAGCAGAAG (SEQ ID NO: 16)	CAAGAAGGGAAATTCCTACGC (SEQ ID NO: 17)	95
25.56 5956	DG13S55	AGCCAGTGTCCACAAGGAAG (SEQ ID NO: 18)	GAGGGTGAGACACATCTCTGG (SEQ ID NO: 19)	283
25.60 5793	DG13S54	AATCGTGCCTCAGTTCCATC (SEQ ID NO: 20)	CCACCAGGAACAACACACAC (SEQ ID NO: 21)	156
25.61 9693	D13S625	TTGCTCTCCAGCCTGGGC (SEQ ID NO: 22)	TTCTCTGGCTGCCTGCG (SEQ ID NO: 23)	185
25.68 7422	DG13S1479	TTTGATTCCGTGGTCCATTA (SEQ ID NO: 24)	TTATTTGGTCGGTGACCTTT (SEQ ID NO: 25)	339
25.74 9344	DG13S1440	GGTAGGTTGAAATGGGCTAACA (SEQ ID NO: 26)	TCATGACAAGGTGTTGGATTT (SEQ ID NO: 27)	153
25.90 1212	DG13S1890	CCTCCTCTGCCATGAAGCTA (SEQ ID NO: 28)	CTATTTGGTCTGCGGGTTGT (SEQ ID NO: 29)	418
25.92 8081	DG13S1879	TTTGAGCCCAGATCTAAGCAA (SEQ ID NO: 30)	AAATGTTAATGTCACCGACAAA (SEQ ID NO: 31)	443
25.93 2609	DG13S1540	TACTGGGTTATCGCCTGACC (SEQ ID NO: 32)	CCAATGGACCTCTTGGACAT (SEQ ID NO: 33)	152
25.94 6743	DG13S1889	TTTGAATGTTTCATATTTGTGGT G (SEQ ID NO: 34)	CCCTCGTAATGAAACCTATTTG A (SEQ ID NO: 35)	222
25.94 8679	DG13S59	TTTCGGCACAGTCCTCAATA (SEQ ID NO: 36)	CAGGGTGTGGTGACAT (SEQ ID NO: 37)	228
25.95 2347	DG13S1894	TGTTTCTTTCTTTCTCTCTCTT TC (SEQ ID NO: 38)	AAATGAGTTCAATGAGTTGTGG TT (SEQ ID NO: 39)	209
25.98 8360	DG13S1545	CAGAGAGGAACAGGCAGAGG (SEQ ID NO: 40)	AGTGGCTGGGAAGCCTTATT (SEQ ID NO: 41)	394
26.07 1866	DG13S1524	AGGTGAGAGAAACAACTGTCTT (SEQ ID NO: 42)	GCCTTCCTTCTAAGGCCAAC (SEQ ID NO: 43)	115
26.18 3492	DG13S1491	TGTTATACATTTCAATTTACCTC A (SEQ ID NO: 44)	GTA CTCCAGCCGGGCAAC (SEQ ID NO: 45)	286
26.23 6289	DG13S62	TTGTTCAAGTGCTCTATAGTTACAA AGT (SEQ ID NO: 46)	GGTCACAAAGCTATGCGATTA (SEQ ID NO: 47)	158
26.27	D13S1244	TCAACAAGTGGAATTAAGAACTG	CTGTTTATGGCTGAGAAGTATG	86

3463		TG (SEQ ID NO: 48)	C (SEQ ID NO:49)	
26.28 6935	DG13S64	TAGCAGGGTGCAGTCTA (SEQ ID NO:50)	ACCATACCACCACCACCATC (SEQ ID NO: 51)	247
26.31 4501	D13S243	ACTGTACTTCTGCCTGGGC (SEQ ID NO: 52)	TTTTGTAATGCCTCAACCATG (SEQ ID NO: 53)	147
26.32 7184	DG13S1529	CTGTAGACTTTATCCCTGACTTA CTG (SEQ ID NO: 54)	CAATGAATGATGAAGATTCCAC TC (SEQ ID NO: 55)	132
26.33 8767	DG13S1908	TGACACCATGTCTTACTGTTTGC (SEQ ID NO: 56)	GAGGATACAATGAGAACCAAA TCTC (SEQ ID NO: 57)	224
26.38 8034	DG13S1546	CCACAGAATGCTCCAAAGGT (SEQ ID NO: 58)	GAGTTCAAGTGATGGATGACG A (SEQ ID NO.59)	357
26.43 5811	DG13S1444	CAGATAGATGAATAGGTGGATGG A (SEQ ID NO: 60)	CACTGTTCCAAGTGCTTTGC (SEQ ID NO: 61)	193
26.48 6657	DG13S1458	GCAGGGCAAACCTGCCTTAT (SEQ ID NO:62)	TTTGGTGAAATGTCTGTTTATG G (SEQ ID NO: 63)	402
26.50 4545	D13S252	CTCAACCTGGCTTCTACT (SEQ ID NO: 64)	TACTCCTTAATAAACTCCCC (SEQ ID NO: 65)	338
26.50 8231	DG13S66	TATGCGTTGTGTGTGTG (SEQ ID NO:66)	GGGCCTTAGATTCTTGTAGTG G (SEQ ID NO: 67)	217
27.11 5120	DG13S1554	CTCGCATCTCGCTTCTCACT (SEQ ID NO: 68)	CTCAAGGGTCCAGTGTTTG (SEQ ID NO: 69)	420
27.14 0675	DG13S1907	TGTCCAGACTGCCTCCTACA (SEQ ID NO:70)	TGCAACACCTGGTTCACAAT (SEQ ID NO: 71)	131
27.14 5842	D13S802	CACAGTGAGACTCTATCTCAAAA A (SEQ ID NO: 72)	TCAGACTGGCTTAGACTGTGG (SEQ ID NO: 73)	150
27.24 0616	DG13S1892	AAATTCCAAAGGCCAGGTG (SEQ ID NO: 74)	CCATACAGTTTCCTAGGTTCTG G (SEQ ID NO: 75)	373
27.25 3452	DG13S1849	CACCTGGCCAAATGTTTGTG (SEQ ID NO: 76)	TGCTTGAATCCAGAGACTGC (SEQ ID NO: 77)	190
27.27 3860	DG13S68	TTTGCGAGTCCTTGTGGAGT (SEQ ID NO: 78)	ACAGTCCGCTCCCTCCTAAT (SEQ ID NO: 79)	238
27.28 0461	DG13S69	ATGCTTGGCCCTCAGTTT (SEQ ID NO: 80)	TTGGCAACCCAAGCTAATATG (SEQ ID NO:81)	296
27.48 3799	D13S1250	CTCCACAGTGACAGTGAGG (SEQ ID NO:82)	GAGAGGTTCCCAATCCC (SEQ ID NO: 83)	160
27.61 0406	D13S1448	CATCAACCTCCCCACCAC (SEQ ID NO: 84)	TATTTTTTCAGTCCCACAGTTA GC (SEQ ID NO:85)	227
27.61 5814	DG13S574	CAGCTCCTGGCCATATTTCT (SEQ ID NO: 86)	GAGCCATTTCTCTGGGTCTG (SEQ ID NO:87)	153
27.64 1211	DG13S73	GGTCCGTGTCAACCCTTAGA (SEQ ID NO: 88)	CAGGTTGATGGGAGGGAAA (SEQ ID NO: 89)	198
27.66 1507	DG13S1532	CGGGAAATGACAGTGAGACC (SEQ ID NO: 90)	TGCCTAGATTCTCCCGTAAG (SEQ ID NO: 91)	163
27.70 5347	D13S1242	GTGCCCAGCCAGATTC (SEQ ID NO: 92)	GCCCCCAGTCAGGTTT (SEQ ID NO: 93)	198
27.88 3872	DG13S576	TTTCTCTCTCCACGGAATGAA (SEQ ID NO:94)	AACCCATTCTCACAGGGTGTA (SEQ ID NO: 95)	199
27.89 7365	DG13S1917	AGGAGTGTGGCAGCTTTGAG (SEQ ID NO: 96)	TGGATTCCCGTGAGTACCAG (SEQ ID NO: 97)	165
27.93 2154	D13S217	ATGCTGGGATCACAGGC (SEQ ID NO: 98)	AACCTGGTGGACTTTTGCT (SEQ ID NO: 99)	170
28.08	DG13S581	AGCATTTCCAATGGTGCTTT	CATGTTGATATGCCTGAAGGA	367

0632		(SEQ ID NO: 100)	(SEQ ID NO:101)	
28.16 5348	DG13S1471	CACTGTCTGCTGCCACTCAT (SEQ ID NO:102)	AGAGATTATGTGATGTACCCTC TCTAT(SEQ ID NO:103)	267
28.30 3252	DG13S583	CAAGCCTGGGACACAGAAAT (SEQ ID NO: 104)	TTTGCAGACACCACAACACA (SEQ ID NO: 105)	264
28.30 3256	D13S120	ATGACCTAGAAATGATACTGGC (SEQ ID NO: 106)	CAGACACCACAACACACATT (SEQ ID NO: 107)	175
28.38 5566	D13S1486	TGGTTTAAAAACCTCATGCC (SEQ ID NO: 108)	ATCCCAAACCTCTGTACTTATGT AGG (SEQ ID NO: 109)	151
28.41 5530	DG13S1024	TTTGCACATACACATAAGCGAAC (SEQ ID NO: 110)	CACAAATCCCGTGCCTAAA (SEQ ID NO: 111)	139
28.41 5530	DG13S1510	ATTCTGGGCTCATGGTACA (SEQ ID NO: 112)	TGCCGTCATCTGCTTTAGAA (SEQ ID NO: 113)	390
28.43 0308	DG13S1495	CCTTGGCTGTTGTGACTGGT (SEQ ID NO:114)	CACTCAGGTGGGAGGATCAC (SEQ ID NO: 115)	285
28.51 7541	DG13S1482	GCTGTTTCCTTGGCTTCTTCT (SEQ ID NO: 116)	CCCATACTTGAGATGACCATG A (SEQ ID NO: 117)	291
28.55 1060	DG13S1845	CACTTTGCCAGTAGCCTTGA (SEQ ID NO:118)	TTGGGAAAGTTAACCCAGAGA (SEQ ID NO: 119)	284
28.63 4903	DG13S1030	TTTGGGAAGAGCCATGAGAC (SEQ ID NO: 120)	CTCTGGGCATTGGAGGATTA (SEQ ID NO: 121)	354
28.63 4903	DG13S1467	TTTGGGAAGAGCCATGAGAC (SEQ ID NO: 122)	AATGCCCATGTGCACTGTAG (SEQ ID NO: 123)	231
28.68 6607	DG13S584	GGGAGACAAGTCAGGTGAGG (SEQ ID NO: 124)	CTGAGTATGGAGTCTTCATCAT TATC (SEQ ID NO: 125)	151
28.79 4032	DG13S1519	TCGTCTCGAAGAAAGAAAGAAGA (SEQ ID NO:126)	CACCATGGGTTAATTGCACA (SEQ ID NO: 127)	286
28.87 6156	DG13S77	TGACGTGGGTTTCAGGTTGTA (SEQ ID NO: 128)	AGTGCATTGGTGCCTTCTCT (SEQ ID NO: 129)	220
28.97 0723	DG13S586	GGACTGCCAATTCTACAGCA (SEQ ID NO: 130)	TTTCCATGGGAAATTTGGTC (SEQ ID NO: 131)	151
28.97 5641	DG13S79	TGCTACTAGATTTGACCAACCA (SEQ ID NO: 132)	GACTTGTAAGGATTTAGTGAT TTCG (SEQ ID NO: 133)	128
29.05 9394	DG13S80	GTGGAAGGCCTCTCTTG (SEQ ID NO: 134)	TGCTTCTTGAGGGAAAGCAT (SEQ ID NO: 135)	233
29.12 6152	DG13S82	CACGTGGTTCACCTCTCTAGG (SEQ ID NO: 136)	TTGGCCACTTATTTGTG (SEQ ID NO: 137)	302
29.15 4691	D13S1299	CGATGAGTGACAGGGCT (SEQ ID NO: 138)	CCTCGTGGGTGGAATAA (SEQ ID NO: 139)	225
29.15 4737	DG13S85	TTGGCCATTAGCAATTAGCA (SEQ ID NO: 140)	CGTGGGTGGAATAAATCAGG (SEQ ID NO: 141)	153
29.15 8462	D13S629	GTTGAGGCAAGAGAATCACT (SEQ ID NO: 142)	GCACATTTACACCAGGGTG (SEQ ID NO.143)	145
29.22 4060	DG13S1934	CCTTCAGAGGATTTCCCTTTC (SEQ ID NO: 144)	CTGGTTTGACTCCAGCTTCA (SEQ ID NO: 145)	431
29.24 5462	DG13S1098	TGTTCAAACCTAAGGTGCTTCA (SEQ ID NO: 146)	GAAACAACAACAACAACA CA (SEQ ID NO: 147)	416
29.25 9840	DG13S1104	CCTGGCACGGAATAGACACT (SEQ ID NO: 148)	GGCCTCCTTTGCTCTGAAG (SEQ ID NO: 149)	378
29.29 4436	DG13S1097	CATCCCTGTGGCTGATTAAGA (SEQ ID NO: 150)	AACAGTTCAGCCCGTTCTA (SEQ ID NO: 151)	162
29.30	DG13S1110	TTTCAAAGGAATATCCAAGTGC	TGGCGTACCATATAAACAGTTC	265

9700		(SEQ ID NO: 152)	TC (SEQ ID NO: 153)	
29.30 9909	DG13S86	TTTCAAAGGAATATCCAAGTGC (SEQ ID NO: 154)	AAACGTGACACTTCCACACA (SEQ ID NO: 155)	177
29.35 9961	DG13S87	TTCAATGAAGGTGCCGAAGT (SEQ ID NO: 156)	TGTCTATCCCAAAGCAA (SEQ ID NO: 157)	218
29.52 2443	DG13S1111	GCAAGACTCTGTTGAAGAAGAAG A (SEQ ID NO: 158)	TCCCTCTGTTTGAGTTTCTCG (SEQ ID NO: 159)	110
29.57 4665	DG13S1101	AGGCACAGTCGCTCATGTC (SEQ ID NO: 160)	AAACTTTAGCTAATGGTGGTCA AA (SEQ ID NO: 161)	333
29.62 2755	DG13S1106	TGTGATTCCAGGGAGCTATCA (SEQ ID NO: 162)	TAGGTGTGTGGAGGACAGCA (SEQ ID NO: 163)	416
29.65 8910	DG13S172	CCAGTTTCAGTTAGCCAAGTCTG (SEQ ID NO: 164)	GAGAGGGAATGAATGCAGGA (SEQ ID NO: 165)	267
29.66 5709	D13S1246	GAGCATGTGTGACTTTCATATTC AG (SEQ ID NO: 166)	AGTGGCTATTCTTCTACAG G (SEQ ID NO: 167)	177
29.67 2561	DG13S1103	TTGCTGGATGCTGGTTTCTA (SEQ ID NO: 168)	AAAGAGAGAGAGAAAGAGAAA GAAAGA (SEQ ID NO: 169)	264
29.82 5975	D13S289	CTGGTTGAGCGGCATT (SEQ ID NO: 170)	TGCAGCCTGGATGACA (SEQ ID NO: 171)	260
29.82 6631	DG13S166	CCTATGGAAGCATAGGGAAGAA (SEQ ID NO: 172)	CCCCTTCTGAGTCTCCTGAT (SEQ ID NO: 173)	395
29.90 6689	DG13S164	GGGATGCAGAAAGGATGTGT (SE Q ID NO: 174)	AAGAATGCTGGCCAACGTAA (S EQ ID NO: 177)	218
29.90 6700	D13S1238	CTCTCAGCAGGCATCCA (SEQ ID NO: 178)	GCCAACGTAATTGACACCA (SE Q ID NO: 179)	129
30.03 1378	D13S290	CCTTAGGCCCCATAATCT (SEQ ID NO: 180)	CAAATTCCTCAATTGCAAAAT (S EQ ID NO: 181)	176
30.08 6303	D13S1229	GGTCATTCAGGGAGCCATT (SE Q ID NO: 182)	CCATTATATTTACCAAGAGGC TGC (SEQ ID NO: 183)	119
30.19 2847	DG13S1460	TGCCTGGTCATCTACCCATT (SEQ ID NO: 184)	TCTACTGCAGCGCTGATCTT (S EQ ID NO: 185)	264
30.21 7670	DG13S1933	CATTTATGAATGGAGGTGAAGC (SEQ ID NO: 186)	ATGGGAGCTCAAAGGGAAAT (S EQ ID NO: 187)	186
30.30 3213	DG13S1448	CAGCAGGAAGATGGACAGGT (SE Q ID NO: 188)	CACACTGCATCACACATACCC (SEQ ID NO: 189)	136
30.31 7871	D13S1287	TATGCCAGTATGCCTGCT (SEQ ID NO: 190)	GTCACATCAGTCCATTGCT (SE Q ID NO: 191)	232
30.34 2102	DG13S1061	CCAAAGCAAGTAACCTCCTCA (S EQ ID NO: 192)	AAACAATCACTGCCCTCTGG (S EQ ID NO: 193)	227
30.57 1837	DG13S1904	TGATGAAATTGCCTAGTGATGC (S EQ ID NO: 194)	GGATCCAATCGTACGCTACC (S EQ ID NO: 195)	136
30.64 3438	DG13S882	CGAATGGGTGACTAACAGCA (SE Q ID NO: 196)	CTGGAGTGCAGGGACATGA (S EQ ID NO: 197)	378
30.66 5937	DG13S295	AAAGAAATATTCCAAGAAGAAAG AAA (SEQ ID NO: 198)	TTGCACAACTTTGTGTAGAGCA T (SEQ ID NO: 199)	279
30.67 4468	D13S1226	GGGTATGTCTTTATTCTCGGCAG TA (SEQ ID NO: 200)	GTGCATTCACAGACCAGTCATT (SEQ ID NO: 201)	219
30.69 0959	DG13S293	GGGCTTGAAGGCACTAAATGT (S EQ ID NO: 202)	CCAAGCAGTAATTCCTTCCTCA (SEQ ID NO: 203)	313
30.71 2468	DG13S1490	ACCTAAACACCACGGACTGG (SE Q ID NO: 204)	CAGGTATCGACATTCTTCCAAA (SEQ ID NO: 205)	418
30.82	DG13S93	TGGGAAGCCAGTAAAGTAGGAA (SEQ ID NO: 206)	AAAGAGACTCCACACATCCATT (SEQ ID NO: 207)	190

4483		SEQ ID NO: 206)	T(SEQ ID NO: 207)	
30.82 4859	DG13S94	AGGGCTATTCCTCAAGGTGTT(S EQ ID NO: 208)	TGCTAACACTACCCTCGCAAT(SEQ ID NO: 209)	332
30.92 8429	DG13S1534	GGGCAGGAATCTCTGAAGTG (SEQ ID NO: 210)	CTCCACTGAGAAGCCAAGGA(S EQ ID NO: 211)	382
30.94 0369	DG13S95	AGGCCAAGCTGGTCCATAG(SEQ ID NO: 212)	TCTCTCAAAGCCTCGCTCTC(S EQ ID NO: 213)	126
30.97 0238	DG13S96	CCTTTGAGGCTGGATCTGTT(SE Q ID NO: 214)	TTTCCTTATCATTATTCCCTC A(SEQ ID NO: 215)	218
31.03 8874	D13S260	AGATATTGTCTCCGTTCCATGA(S EQ ID NO: 216)	CCCAGATATAAGGACCTGGCT A(SEQ ID NO: 217)	163
31.09 2294	DG13S17	TTTAAGCCCTGTGGAATGTATTT(SEQ ID NO: 218)	GACATTGCAGGTCAAGTAGGG (SEQ ID NO: 219)	157
31.20 7844	DG13S306	TGCATAAGGCTGGAGACAGA(SE Q ID NO: 220)	CACAGCAGATGGGAGCAAA(S EQ ID NO: 221)	158
31.26 0521	DG13S18	GTGCATGTGCATACCAGACC(SE Q ID NO: 222)	GGCAAGATGACCTCTGAAA(S EQ ID NO: 223)	319
31.29 9720	DG13S1905	GTCCACTGCAGCACACAGAG(SE Q ID NO: 224)	GCACTGGTAGATACATGCTAA CG(SEQ ID NO: 225)	383
31.35 3230	DG13S307	GGGTATCTTGCCAGGTGT(SEQ ID NO: 226)	TGGCTAAGCACAATCCCTTT(S EQ ID NO: 227)	403
31.35 5135	DG13S1062	TTTGTGTTCCAGGTGAGAATTG(S EQ ID NO: 228)	GAACCATATCCCAAGGCACT(S EQ ID NO: 229)	120
31.41 4329	DG13S1874	AACCCAAATCAACAAACCAGA(SE Q ID NO: 230)	AATGAATTCTGGGTCACATGC(SEQ ID NO: 231)	404
31.42 9562	DG13S1093	TTGTTCCACATTCTTCTACA(S EQ ID NO: 232)	TTAAACTCGTGGCAAAGACG(S EQ ID NO: 233)	273
31.62 6502	DG13S1059	CACCATGCCTGGCTCTTT(SEQ ID NO: 234)	AACTTCTCCAGTTGTGTGGTTG (SEQ ID NO: 235)	330
31.72 3749	DG13S1086	AGCTGAGCTCATGCCACT(SEQ ID NO: 236)	CAAGACCTTGTGCATTGGA(S EQ ID NO: 237)	155
31.74 6074	DG13S1515	AGCCAGACATGGTAGTGTGC(SE Q ID NO: 238)	GCAATAACTCACACATCAGCAA (SEQ ID NO: 239)	417
31.85 5732	D13S171	CCTACCATTGACACTCTCAG(SE Q ID NO: 240)	TAGGGCCATCCATTCT(SEQ ID NO: 241)	231
31.91 7332	DG13S1092	ACCAAGATATGAAGGCCAAA(SE Q ID NO: 242)	CCTCCAGCTAGAACAATGTGA A(SEQ ID NO: 243)	176
32.00 2852	DG13S1449	TGTCCATAGCTGTAGCCCTGT(S EQ ID NO: 244)	CTCAATGGGCATCTTTAGGC(S EQ ID NO: 245)	279
32.07 2957	DG13S1489	TGTAATTCAACGACTGGTGTCC(S EQ ID NO: 246)	AGCTTCTGATGGTTGCTGGT(S EQ ID NO: 247)	130
32.08 3989	DG13S312	CAAACAAACAAACAAGCAAACC(SEQ ID NO: 248)	TGGACGTTTCTTTTCAGTGAGG(SEQ ID NO: 249)	349
32.12 5177	DG13S1511	TGATAACTTACCAGCATGTGAGC (SEQ ID NO: 250)	TCACCTCACCTAAGGATCTGC(SEQ ID NO: 251)	314
32.18 3547	DG13S314	CATGCAATTGCCAATAGAG(SE Q ID NO: 252)	TTGGGCTTGTCTACCTAGTTCA (SEQ ID NO: 253)	335
32.19 5358	DG13S1090	TGGGTTCTCATACTGGAGTG(S EQ ID NO: 254)	GCCTGAGCTCCAAGCTCTTT(S EQ ID NO: 255)	169
32.25 1038	DG13S1071	GCTGCACGTATTTGTTGGTG(SE Q ID NO: 256)	AAACAGCAGAAATGGGAACC(S EQ ID NO: 257)	239
32.35	DG13S1068	CCGTGGGCTATCAATTTCTG(SE	AAGATGCAATCTGTTTCCAA(SEQ ID NO: 258)	238

6895		Q ID NO: 258)	SEQ ID NO: 259)	
32.37		CCCAAGACTGAGGAGGTCAA(SE	GCTGACGGAGAGGAAAGAGA(
3040	DG13S1077	Q ID NO: 260)	SEQ ID NO: 261)	374
32.42		TGACAAGGGTGTGGTTATGG	CCGCACTTTCTCTTCTGGAC	
2780	DG13S1906	(SEQ ID NO: 262)	(SEQ ID NO:263)	425
32.51		TGAGAAGCCTGGGCATTAAG	ACAAGCTCATCCAGGGAAAG	
1590	DG13S316	(SEQ ID NO: 264)	(SEQ ID NO: 265)	243
32.61		TTGGAAAGGAAGAAAGGAAGG	TTGAAACCTAAATGCCACCTG	
0517	DG13S317	(SEQ ID NO: 266)	(SEQ ID NO:267)	215
32.61		ACCTGTTGTATGGCAGCAGT	GGTTGACTCTTTCCCAACT	
0713	D13S1493	(SEQ ID NO: 268)	(SEQ ID NO: 269)	248
32.78		AGAGCTGATCTGGCCGAAG	GGTGGACACAGAATCCACACT	
9894	DG13S1558	(SEQ ID NO:270)	(SEQ ID NO: 271)	399
32.86		GGCCTGAAAGGTATCCTC (SEQ	TCCCACCATAAGCACAAG	
5950	D13S267	ID NO:272)	(SEQ ID NO: 273)	160
32.96		TCAACCTAGGATTGGCATTACA	TCTAGGATTTGTGCCTTTCCA	
1410	DG13S1478	(SEQ ID NO: 274)	(SEQ ID NO: 275)	387
33.00		GACGTCTTAGGATTGACTTCTGC	CCAAATACACATTCTTAAAGGG	
9922	DG13S1513	(SEQ ID NO: 276)	AAA (SEQ ID NO: 277)	173
33.12		GACTGCAGATCGTGGGACTT	TTCTCCAGAGAAACCAACCA	
5696	DG13S1461	(SEQ ID NO: 278)	(SEQ ID NO: 279)	148
33.16		ATTCGTGCAGCTGTTTCTGC	GCATGACATTGTAAATGGAGG	
8468	DG13S1551	(SEQ ID NO. 280)	A (SEQ ID NO:281)	263
33.25		GGTGGGAATGTGTGACTGAA	CCAGGTACAACATTCTCCTGAT	
4989	DG13S1884	(SEQ ID NO. 282)	(SEQ ID NO:283)	123
33.34		TGCAGGTGGGAGTCAA (SEQ ID	AAATAACAAGAAGTGACCTTCC	
0124	D13S1293	NO. 284)	TA (SEQ ID NO: 285)	129
33.34		TGTTCTCCTCACCTGCTCT	TTTCAGGCTAGGAAGATCCTTT	
6908	DG13S326	(SEQ ID NO: 286)	(SEQ ID NO: 287)	261
33.39		AAAGGATGCATTCGGTTAGAG	ACTGTCCTGTGCCTGTGCTT	
2629	DG13S1518	(SEQ ID NO: 288)	(SEQ ID NO: 289)	375
33.40		CCTGAATAGGTGGAATTAAGATC	TCAAGGAGCATACACACACAC	
5527	DG13S23	AA (SEQ ID NO: 290)	A (SEQ ID NO: 291)	107
33.43		GTCCACCTAATGGCTCATTC	CAAGAAGCACTCATGTTTGTG	
1536	D13S620	(SEQ ID NO: 292)	(SEQ ID NO: 293)	185
33.43		AGCCTGTGATTGGCTGAGA (SEQ	GGCTTACAGCTGCCTCCTTT	
7092	DG13S1866	ID NO: 294)	(SEQ ID NO: 295)	410
33.49		CCCACAGAGCACTTTGTTAGA	GCCTCCCTTAAGCTGTTATGC	
5718	DG13S1927	(SEQ ID NO: 296)	(SEQ ID NO: 297)	401
33.50		CACTCTTTACTGCCAATCACTCC	GCCGTGTGGGTGTATGAAT	
3440	DG13S1503	(SEQ ID NO:298)	(SEQ ID NO: 299)	226
33.56		TTGTACCAGGAACCAAAGACAA	CACAGACAGAGGCACATTGA	
8100	DG13S332	(SEQ ID NO: 300)	(SEQ ID NO: 301)	176
33.67		GCTCTGGTCACTCCTGCTGT	CATGCCTGGCTGATTGTTT	
5841	DG13S333	(SEQ ID NO: 302)	(SEQ ID NO: 303)	446
33.77		CCAACATCGGGAAGT (SEQ ID	TGCATTCTTTAAGTCCATGTC	
1389	D13S220	NO: 304)	(SEQ ID NO: 305)	191
33.81		CAGCAACTGACAACTCATCCA	CCTCAATCCTCAGCTCCAAC	
8041	DG13S1919	(SEQ ID NO: 306)	(SEQ ID NO.307)	255
33.87		TCCTTCACAGCTTCAAACCTCA	AGTGAGAAGCTTCCATACTGG	
3614	DG13S1439	(SEQ ID NO: 308)	T (SEQ ID NO: 309)	239
33.90	DG13S335	GCCAACCGTTAGACAAATGA	CTACATGTGCACCACAACACC	201

6065		(SEQ ID NO: 310)	(SEQ ID NO: 311)	
33.92 8653	DG13S340	AGTTTATTGCCGCCGAGAG (SEQ ID NO: 312)	ACCCACCACATTCAACAAGC (SEQ ID NO: 313)	373
34.01 9455	DG13S1496	CGATTGCCATGTCTCTTTGA (SEQ ID NO: 314)	GAGATCTGGCCTGGATTTGT (SEQ ID NO: 315)	155
34.03 4089	DG13S342	TGAGGCCAGCCTTACCTCTAT (SEQ ID NO: 316)	CCAGACATGGTGGCTTGT (SEQ ID NO: 317)	366
34.06 1777	DG13S344	GAAGGAAGGAAGGGAAGGAA (SEQ ID NO: 318)	AAGGATGAGAAGAGTCCATGC (SEQ ID NO: 319)	292
34.06 7239	DG13S345	AAATACCCTTTGAACAGACACAC (SEQ ID NO: 320)	TAGCTGAGCATGGTGGTACG (SEQ ID NO: 321)	201
34.07 7874	DG13S346	AAAGACAAGACAGCAATCCAAA (SEQ ID NO: 322)	GCAGAACCCAGGCTACAGAT (SEQ ID NO: 323)	152
34.08 4138	DG13S347	TCATTGTCAGCACAGAATGAACT (SEQ ID NO: 324)	GGAGGGAGGGAAGAAAGAGA (SEQ ID NO: 325)	338
34.08 4326	D13S624	GCAACACAGTGAAAGCCCA (SEQ ID NO: 326)	ACAGGAGCATGCCACCATG (SEQ ID NO: 327)	191
34.15 6075	DG13S339	GGGAAGAGGAGATTGACTTGTT (SEQ ID NO: 328)	GGAACACCATCATTCCAACC (SEQ ID NO: 329)	232
34.19 2478	DG13S1926	TACAAGCTCCACCGTCCTTC (SEQ ID NO: 330)	TGAGTTGCTGCCTCTTCAAA (SEQ ID NO: 331)	261
34.22 0227	DG13S1469	TGCTAATGGGCCAAGGAATA (SEQ ID NO: 332)	GCTAAATGTCCTCATGAATAGC (SEQ ID NO: 333)	382
34.30 1448	DG13S351	TGTCCTGCAGACAGATGGTC (SEQ ID NO: 334)	CCTCCGGAGTAGCTGGATTA (SEQ ID NO: 335)	294
34.38 7883	DG13S26	GAGACTGGCCCTCATTCTTG (SEQ ID NO: 336)	AAGAAGCCAGAGACAAAGAAA TACA (SEQ ID NO: 337)	330
34.53 5441	DG13S30	CATCTATCTTTGGATTCACTGGT (SEQ ID NO: 338)	TGCTCCCAACATCTTACCAG (SEQ ID NO: 339)	388
34.56 5594	DG13S1435	TGTCCTCTGGTCATTTCTATGGT (SEQ ID NO: 340)	CATGAATGAGAAGTGATGAAT GG (SEQ ID NO: 341)	235
34.65 9858	DG13S1446	AACACGGGAAATTCCAACAG (SEQ ID NO: 342)	TGAAGAACTGAAATTGCCAGTA A (SEQ ID NO: 343)	379
34.71 2260	DG13S356	CAGACACTGTAACTGGCTTCG (SEQ ID NO: 344)	GCCACATTGCTATCAGCGTA (SEQ ID NO: 345)	212
34.73 8756	DG13S357	TGTCATAGGCTTGCGGTATTT (SEQ ID NO: 346)	TTGGTAGGGTCCTTTCTTT (SEQ ID NO: 347)	202
34.77 0571	DG13S1032	GCCTGCTCACTGTTGTTTGA (SEQ ID NO: 348)	CGGTTATCAGAGACTGGTGGT (SEQ ID NO: 349)	211
34.79 9679	DG13S1557	GGCTTATTTCATGTACGGCTA (SEQ ID NO: 350)	GGTTAACTCTACTTAGTCCTG ATGC (SEQ ID NO: 351)	158
34.88 2934	DG13S1925	GAACCTCTGCAGGCACCTCTT (SEQ ID NO: 352)	CCTGAAGCGCTTGTAAGTAA (SEQ ID NO: 353)	456
34.93 2690	DG13S1484	TGTTGCGTACTCAGCCATA (SEQ ID NO: 354)	GACAGGTGTCAAACGGGTCT (SEQ ID NO: 355)	246
34.94 2547	DG13S360	TTGGCTTCTCGCTCTTTCTT (SEQ ID NO: 356)	AGCCATCAGTCACATGCAAA (SEQ ID NO: 357)	350
34.99 8979	DG13S1522	AGATCTCCAGGGCAGAGGAC (SEQ ID NO: 358)	CCTTCCTCCCTCCTTCTCTC (SEQ ID NO: 359)	355
35.07 4962	DG13S1517	CGTCATTGATCCCAATCATCT (SEQ ID NO: 360)	GGCTGATAGCCTCCCTTGTA (SEQ ID NO: 361)	235
35.07	DG13S1521	GAGAGAGAGCAGCTTGCATGT (SEQ ID NO: 362)	GGCTGATAGCCTCCCTTGTA (SEQ ID NO: 363)	172

4962		EQ ID NO:362)	EQ ID NO:363)	
35.12 6882	DG13S364	ACCTTTCAAGCTTCCGGTTT(SEQ ID NO: 364)	TTCCATCCGTCCATCTATCC(S EQ ID NO: 365)	172
35.32 8663	DG13S1036	TTAAAGTCACTTGTCTGTGGTCA(SEQ ID NO: 366)	TTTGTAGGAATCAAGTCAAATA ATGTA(SEQ ID NO: 367)	216
35.33 5364	DG13S367	CAAACATCACACTGGGCAA(SEQ ID NO: 368)	TGCTTTGGAATCTTTCTTGCT(S EQ ID NO: 369)	301
35.37 1957	DG13S1901	CTGCCAGGATGTCAGCATT(SEQ ID NO: 370)	TCCACACTTTCTCATCACCTAA A(SEQ ID NO: 371)	440
35.42 0295	DG13S1037	CTTTCGGAAGCTTGAGCCTA(SE Q ID NO: 372)	CCCAAGACCACTGCCATATT(S EQ ID NO: 373)	269
35.42 5841	DG13S1854	TGACAGGTTTGGGTATATTGGA(SEQ ID NO: 374)	TGCTTAATGTAGTGGCAGCA(S EQ ID NO: 375)	124
35.50 6053	DG13S1038	TCCTGCCTTTGTGAATTCCT(SEQ ID NO: 376)	GTTGAATGAGGTGGGCATTA(S EQ ID NO: 377)	334
35.54 7210	DG13S1039	CCATTTAATCCTCCAGCCATT(SE Q ID NO: 378)	GCTCCACCTTGTTACCCTGA(S EQ ID NO: 379)	167
35.60 9252	DG13S1840	ACAACCCTGGAATCTGGACT(SE Q ID NO: 380)	GAAGGAAAGGAAAGGAAAGAA A(SEQ ID NO: 381)	217
35.61 9286	DG13S369	TGACAAGACTGAAACTTCATCAG(SEQ ID NO: 382)	GATGCTTGCTTTGGGAGGTA(S EQ ID NO: 383)	257
35.62 7911	D13S305	TTGAGGACCTGTCGTTACG (SEQ ID NO: 384)	TTATAGAGCAGTTAAGGCACA (SEQ ID NO: 385)	394
35.65 6659	DG13S375	TGAGGGTGGTAAGCCCTTATT(S EQ ID NO: 386)	GGAGTTGTGGCCTCTCTCTCT(SEQ ID NO: 387)	192
35.76 0368	D13S219	AAGCAAATATGCAAAATTGC(SEQ ID NO: 388)	TCCTTCTGTTTCTTGACTTAAC A (SEQ ID NO: 389)	125
35.82 5852	DG13S378	TGCTAAGAGGGCAGATCTCA(SE Q ID NO: 390)	GGCTCATAGCCAATTTCTCC (SEQ ID NO: 391)	324
35.83 2127	DG13S32	CGGCATTCTCAATAACCTCAA (SEQ ID NO: 392)	TCTTTGATGAGGATCAATTAGT GG (SEQ ID NO: 393)	214
35.87 2936	DG13S1549	ACGCACACACACACACAC (SEQ ID NO: 394)	TGCCTCTGTAATCCTGTGTAGC (SEQ ID NO:395)	260
35.91 2321	DG13S1473	GCTCTAAGGTGGGTCCCAATA (SEQ ID NO:396)	GGGAATGACAAGATCAGTTTA CC (SEQ ID NO: 397)	163

Table 7.

The selected SNP haplotypes and the corresponding p-values, relative risk (RR), number of patients (#aff), allelic frequency in patients (aff.frq.), carrier frequency in patients (carr.frq.), number of controls (#con), allelic frequency in controls (con.frq.), population attributable risk (PAR). The patients used for this analysis were all unrelated within 4 meioses.

	p-val	RR	#aff	aff.frq.	carr.frq.	#con	con.frq.	PAR	DG00AAFIU	SG13S25	DG00AAJFF	DG00AAHII	DG00AAHID	B_SNP_310657	SG13S30	SG13S32	SG13S42	SG13S35
B4	4.8E-05	2.08	903	0.106	0.20	619	0.054	0.11		2		2			2		0	
B5	2.4E-05	2.20	910	0.101	0.19	623	0.049	0.11	3	2		2			2		0	
B6	1.8E-06	2.22	913	0.131	0.24	623	0.063	0.14	3	2	2	2				0		2
A4	5.1E-06	1.81	919	0.159	0.29	623	0.095	0.14		2			3	2		0		
A5	2.6E-06	1.91	920	0.150	0.28	624	0.085	0.14	3	2			3	2		0		

All references cited herein are incorporated by reference in their entirety. While this invention has been particularly shown and described with references to preferred embodiments thereof, it will be understood by those skilled in the art that various changes in form and details may be made therein without departing from the scope of the invention encompassed by the appended claims.

CLAIMS

What is claimed is:

- 5 1. A method of diagnosing a susceptibility to myocardial infarction in an individual, comprising detecting a polymorphism in a FLAP nucleic acid, wherein the presence of the polymorphism in the nucleic acid is indicative of a susceptibility to myocardial infarction.
- 10 2. A method of diagnosing a susceptibility to myocardial infarction, comprising detecting an alteration in the expression or composition of a polypeptide encoded by a FLAP nucleic acid in a test sample, in comparison with the expression or composition of a polypeptide encoded by a FLAP nucleic acid in
15 a control sample, wherein the presence of an alteration in expression or composition of the polypeptide in the test sample is indicative of a susceptibility to myocardial infarction.
3. The method of Claim 1 wherein the polymorphism in the FLAP nucleic acid is indicated by detecting the presence of a haplotype comprising one or more of
20 the markers DG00AAFIU, SG13S25, DG00AAJFF, DG00AAHII, DG00AAHID, B_SNP_310657, SG13S30, SG13S32, SG13S42, and SG13S35 at the 13q12 locus comprising a FLAP nucleic acid.
4. The method of Claim 1 wherein the polymorphism comprises at least one of
25 the polymorphisms as indicated in Table 3.
5. A method of diagnosing myocardial infarction, comprising detecting an alteration in the expression or composition of a polypeptide encoded by a FLAP nucleic acid in a test sample, in comparison with the expression or
30 composition of a polypeptide encoded by a FLAP nucleic acid in a control

sample, wherein the presence of an alteration in expression or composition of the polypeptide in the test sample is indicative of myocardial infarction.

6. An isolated nucleic acid molecule comprising a FLAP nucleic acid, wherein
5 the FLAP nucleic acid has a nucleic acid sequence of SEQ ID NO: 1 or SEQ ID NO: 3, or the complement of SEQ ID NO: 1 or SEQ ID NO: 3, wherein the nucleic acid molecule comprises a polymorphism as indicated in Table 3.
7. An isolated nucleic acid molecule having a polymorphism as indicated in
10 Table 3, which hybridizes under high stringency conditions to a nucleic acid sequence of SEQ ID NO: 1 or SEQ ID NO: 3, or the complement of SEQ ID NO: 1 or SEQ ID NO: 3.
8. A method for assaying for the presence of a first nucleic acid molecule in a
15 sample, comprising contacting said sample with a second nucleic acid molecule, where the second nucleic acid molecule comprises a nucleic acid sequence of SEQ ID NO: 1 or SEQ ID NO: 3, and hybridizes to the first nucleic acid under high stringency conditions.
- 20 9. A vector comprising an isolated nucleic acid molecule selected from the group consisting of:
 - a) a nucleic acid sequence of SEQ ID NO: 1 or SEQ ID NO: 3; or
 - b) complement of a nucleic acid sequence of SEQ ID NO: 1 or SEQ ID NO: 3;25 wherein the nucleic acid molecule is operably linked to a regulatory sequence.
10. A recombinant host cell comprising the vector of Claim 9.
11. A method for producing a polypeptide encoded by an isolated nucleic acid
30 molecule having a polymorphism as indicated in Table 3, comprising culturing

the recombinant host cell of Claim 10 under conditions suitable for expression of the nucleic acid molecule.

12. A method of assaying for the presence of a polypeptide encoded by an isolated
5 nucleic acid molecule according to Claim 6 in a sample, the method comprising contacting the sample with an antibody which specifically binds to the encoded polypeptide.

13. A method of identifying an agent that alters expression of a FLAP nucleic
10 acid, comprising:

- a) contacting a solution containing a nucleic acid comprising the promoter region of the FLAP nucleic acid operably linked to a reporter gene with an agent to be tested;
- b) assessing the level of expression of the reporter gene; and
- 15 c) comparing the level of expression with a level of expression of the reporter gene in the absence of the agent; wherein if the level of expression of the reporter gene in the presence of the agent differs, by an amount that is statistically significant, from the level of expression in the absence of the agent, then the agent is an agent
20 that alters expression of the FLAP nucleic acid.

14. An agent that alters expression of the FLAP nucleic acid, identifiable according to the method of Claim 13.

25 15. A method of identifying an agent that alters expression of a FLAP nucleic acid, comprising:

- a) contacting a solution containing a nucleic acid of Claim 1 or a derivative or fragment thereof with an agent to be tested;
- b) comparing expression with expression of the nucleic acid, derivative
30 or fragment in the absence of the agent;

wherein if expression of the nucleotide, derivative or fragment in the presence of the agent differs, by an amount that is statistically significant, from the expression in the absence of the agent, then the agent is an agent that alters expression of the FLAP nucleic acid.

- 5
16. The method of Claim 15, wherein the expression of the nucleotide, derivative or fragment in the presence of the agent comprises expression of one or more splicing variant(s) that differ in kind or in quantity from the expression of one or more splicing variant(s) the absence of the agent.
- 10
17. An agent that alters expression of a FLAP nucleic acid, identifiable according to the method of Claim 15.
18. An agent that alters expression of a FLAP nucleic acid, selected from the
- 15 group consisting of: antisense nucleic acid to a FLAP nucleic acid; a FLAP polypeptide; a FLAP nucleic acid receptor; a FLAP nucleic acid binding agent; a peptidomimetic; a fusion protein; a prodrug thereof; an antibody; and a ribozyme.
- 20 19. A method of altering expression of a FLAP nucleic acid, comprising contacting a cell containing a FLAP nucleic acid with an agent of Claim 18.
20. A method of identifying a polypeptide which interacts with a FLAP polypeptide, comprising employing a yeast two-hybrid system using a first
- 25 vector which comprises a nucleic acid encoding a DNA binding domain and a FLAP polypeptide, splicing variant, or a fragment or derivative thereof, and a second vector which comprises a nucleic acid encoding a transcription activation domain and a nucleic acid encoding a test polypeptide, wherein if transcriptional activation occurs in the yeast two-hybrid system, the test
- 30 polypeptide is a polypeptide which interacts with a FLAP polypeptide.

21. A transgenic animal comprising a nucleic acid selected from the group consisting of: an exogenous FLAP nucleic acid and a nucleic acid encoding a FLAP polypeptide.
- 5 22. A method for assaying a sample for the presence of a FLAP nucleic acid, comprising:
- a) contacting said sample with a nucleic acid comprising a contiguous nucleic acid sequence which is at least partially complementary to a part of the sequence of said FLAP nucleic acid under conditions appropriate
10 for hybridization; and
 - b) assessing whether hybridization has occurred between a FLAP nucleic acid nucleic acid and said nucleic acid comprising a contiguous nucleotide sequence which is at least partially complementary to a part of the sequence of said FLAP nucleic acid;
15 wherein if hybridization has occurred, a FLAP nucleic acid is present in the nucleic acid.
23. The method of Claim 22, wherein said nucleic acid comprising a contiguous nucleic acid sequence is completely complementary to a part of the sequence
20 of said FLAP nucleic acid.
24. The method of Claim 22, comprising amplification of at least part of said FLAP nucleic acid.
- 25 25. The method of Claim 22, wherein said contiguous nucleic acid sequence is 100 or fewer nucleotides in length and is either: a) at least 80% identical to a contiguous sequence of nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3; b) at least 80% identical to the complement of a contiguous sequence of nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3; or c) capable of selectively hybridizing to
30 said FLAP nucleic acid.

26. A reagent for assaying a sample for the presence of a FLAP nucleic acid, said reagent comprising a nucleic acid comprising a contiguous nucleic acid sequence which is at least partially complementary to a part of the nucleic acid sequence of said nucleic acid.
27. The reagent of Claim 26, wherein the nucleic acid comprises a contiguous nucleotide sequence, which is completely complementary to a part of the nucleic acid sequence of said FLAP nucleic acid.
28. A reagent kit for assaying a sample for the presence of a FLAP nucleic acid, comprising in separate containers:
- a) one or more labeled nucleic acids comprising a contiguous nucleotide sequence which is at least partially complementary to a part of the nucleic acid sequence of said FLAP nucleic acid; and
 - b) reagents for detection of said label.
29. The reagent kit of Claim 28, wherein the labeled nucleic acid comprises a contiguous nucleotide sequences which is completely complementary to a part of the nucleic acid sequence of said FLAP nucleic acid.
30. A reagent kit for assaying a sample for the presence of a FLAP nucleic acid, comprising one or more nucleic acids comprising a contiguous nucleic acid sequence which is at least partially complementary to a part of the nucleic acid sequence of said FLAP nucleic acid, and which is capable of acting as a primer for said FLAP nucleic acid when maintained under conditions for primer extension.
31. The use of a nucleic acid which is 100 or fewer nucleotides in length and which is either: a) at least 80% identical to a contiguous sequence of nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3; b) at least 80% identical to

the complement of a contiguous sequence of nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3; or c) capable of selectively hybridizing to said FLAP nucleic acid, for assaying a sample for the presence of a FLAP nucleic acid.

5 32. The use of a first nucleic acid which is 100 or fewer nucleotides in length and which is either:

- a) at least 80% identical to a contiguous sequence of nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3;
- 10 b) at least 80% identical to the complement of a contiguous sequence of nucleotides of SEQ ID NO: 1 or SEQ ID NO: 3; or
- c) capable of selectively hybridizing to said FLAP nucleic acid; for assaying a sample for the presence of a FLAP nucleic acid that has at least one nucleotide difference from the first nucleic acid.

15 33. The use of a nucleic acid which is 100 or fewer nucleotides in length and which is either:

- a) at least 80% identical to a contiguous sequence of nucleotides in one of the nucleic acid sequences as shown in Table 3;
- 20 b) at least 80% identical to the complement of a contiguous sequence of nucleotides in one of the nucleic acid sequences as shown in Table 3; or
- c) capable of selectively hybridizing to said FLAP nucleic acid; for diagnosing a susceptibility to a disease or condition associated with a FLAP nucleic acid.

25 34. A method of diagnosing a susceptibility to myocardial infarction in an individual, comprising determining the presence or absence in the individual of a haplotype using one or more of the markers DG00AAFIU, SG13S25, DG00AAJFF, DG00AAHII, DG00AAHID, B_SNP_310657, SG13S30, 30 SG13S32, SG13S42, and SG13S35, with alleles T, G, G, G, T, G, G, A, A and

-97-

G at the 13q12 loci comprising a FLAP nucleic acid, wherein the presence of the haplotype is diagnostic of susceptibility to myocardial infarction.

35. The method of Claim 34, wherein determining the presence or absence of the
5 haplotype comprises enzymatic amplification of nucleic acid from the individual.

36. The method of claim 35, wherein determining the presence or absence of the haplotype further comprises electrophoretic analysis.

10

37. The method of claim 34, wherein determining the presence or absence of the haplotype further comprises restriction fragment length polymorphism analysis.

15 38. The method of claim 34, wherein determining the presence or absence of the haplotype further comprises sequence analysis.

39. A method of diagnosing a susceptibility to myocardial infarction in an individual, comprising:
20 obtaining a nucleic acid sample from said individual; and
analyzing the nucleic acid sample for the presence or absence of a haplotype using one or more of the markers DG00AAFIU, SG13S25, DG00AAJFF, DG00AAHII, DG00AAHID, B_SNP_310657, SG13S30, SG13S32, SG13S42, and SG13S35, with alleles T, G, G, G, T, G, G, A, A and G at the
25 13q12 loci comprising a FLAP nucleic acid, wherein the presence of the haplotype is diagnostic for a susceptibility to myocardial infarction.

40. A method of diagnosing myocardial infarction in an individual, comprising determining the presence or absence in the individual of a haplotype
30 comprising one or more markers and/or single nucleotide polymorphisms as shown in Table 3 in the locus on chromosome 13q12 comprising a FLAP

-98-

nucleic acid, wherein the presence of the haplotype is diagnostic of myocardial infarction

41. A method of diagnosing a susceptibility to myocardial infarction in an individual, comprising determining the presence or absence in the individual of a haplotype comprising one or more markers and/or single nucleotide polymorphisms as shown in Table 3 in the locus on chromosome 13q12 comprising a FLAP nucleic acid, wherein the presence of the haplotype is diagnostic of a susceptibility to myocardial infarction.
42. A method for the diagnosis and identification of susceptibility to myocardial infarction in an individual, comprising: screening for an at-risk haplotype in the FLAP nucleic acid that is more frequently present in an individual susceptible to myocardial infarction compared to an individual who is not susceptible to myocardial infarction wherein the at-risk haplotype increases the risk significantly.
43. The method of Claim 42 wherein the significant increase is at least about 20%.
44. The method of Claim 42 wherein the significant increase is identified as an odds ratio of at least about 1.2.

1/131

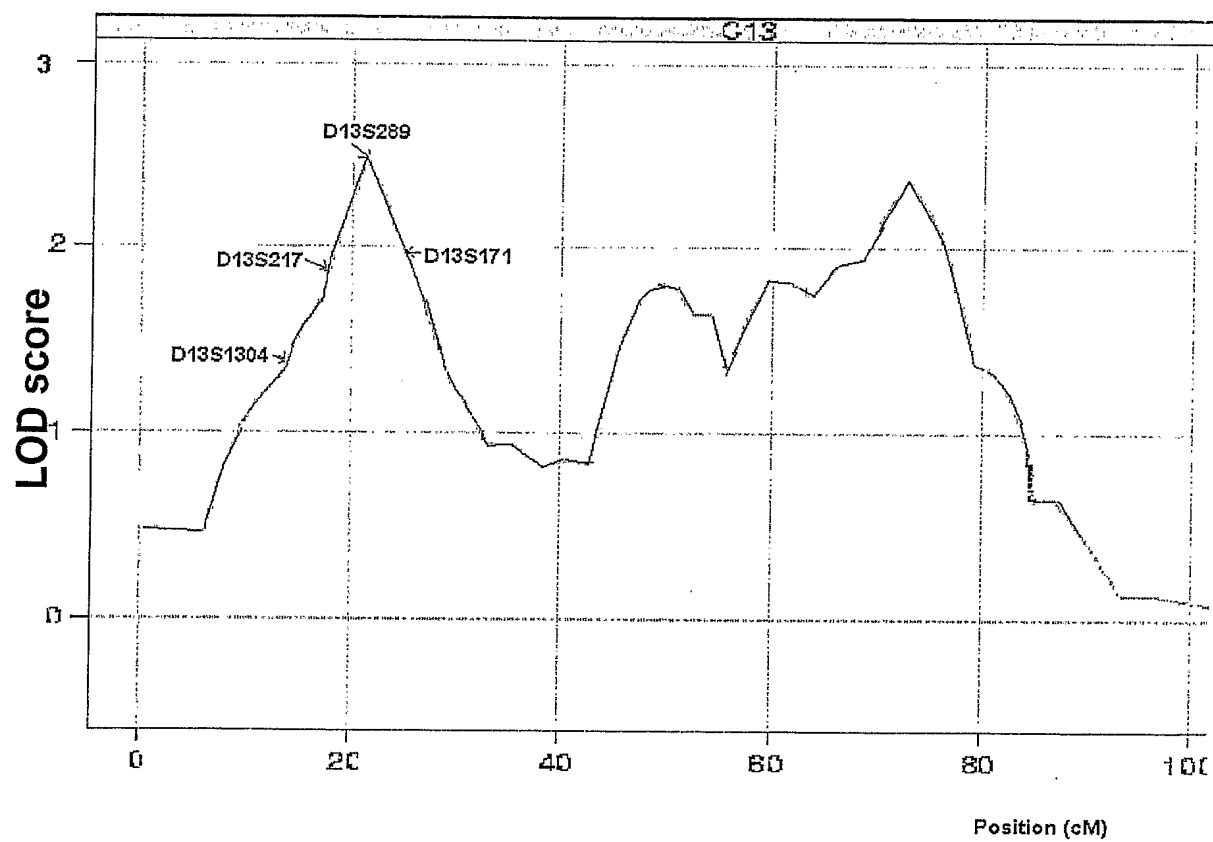


FIG. 1

2/131

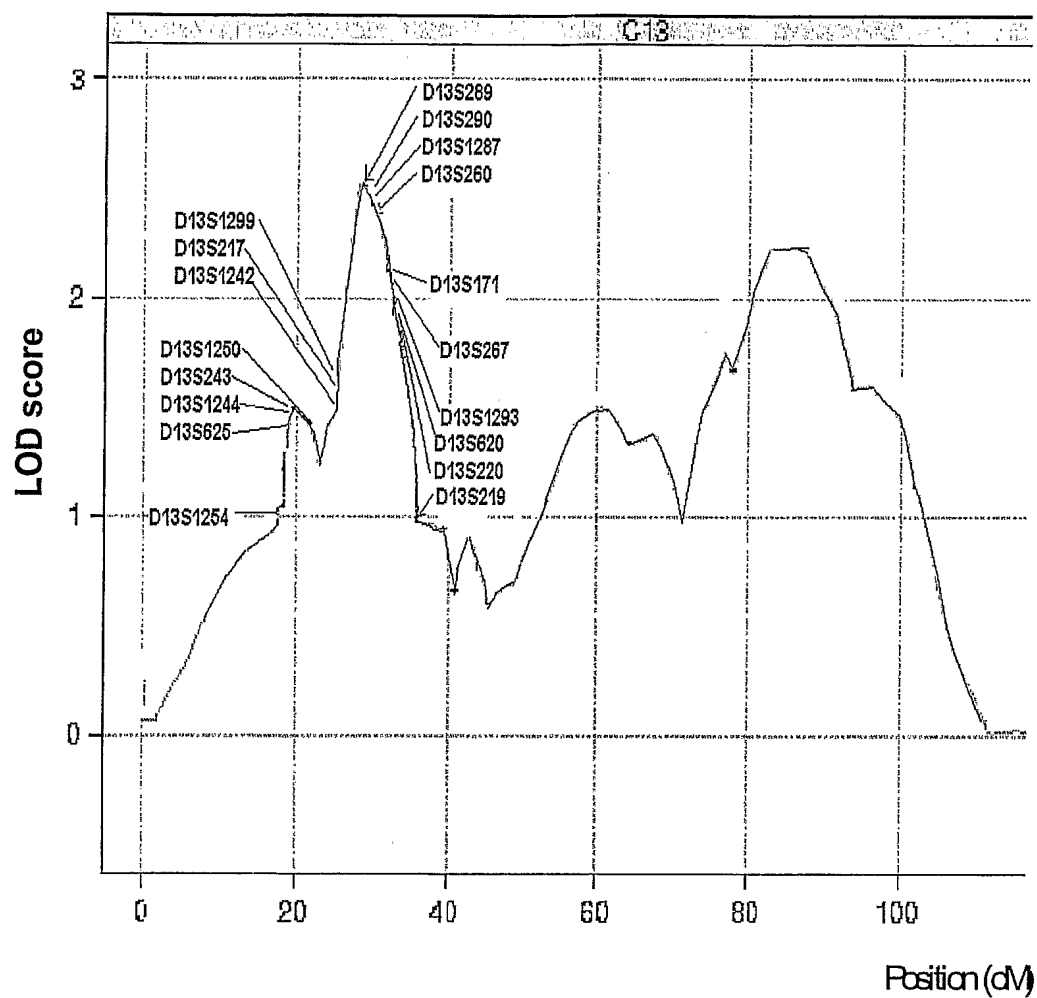


FIG.2

3/131

Location of haplotypes showing association
(p value < 10^{-5}) with the disease

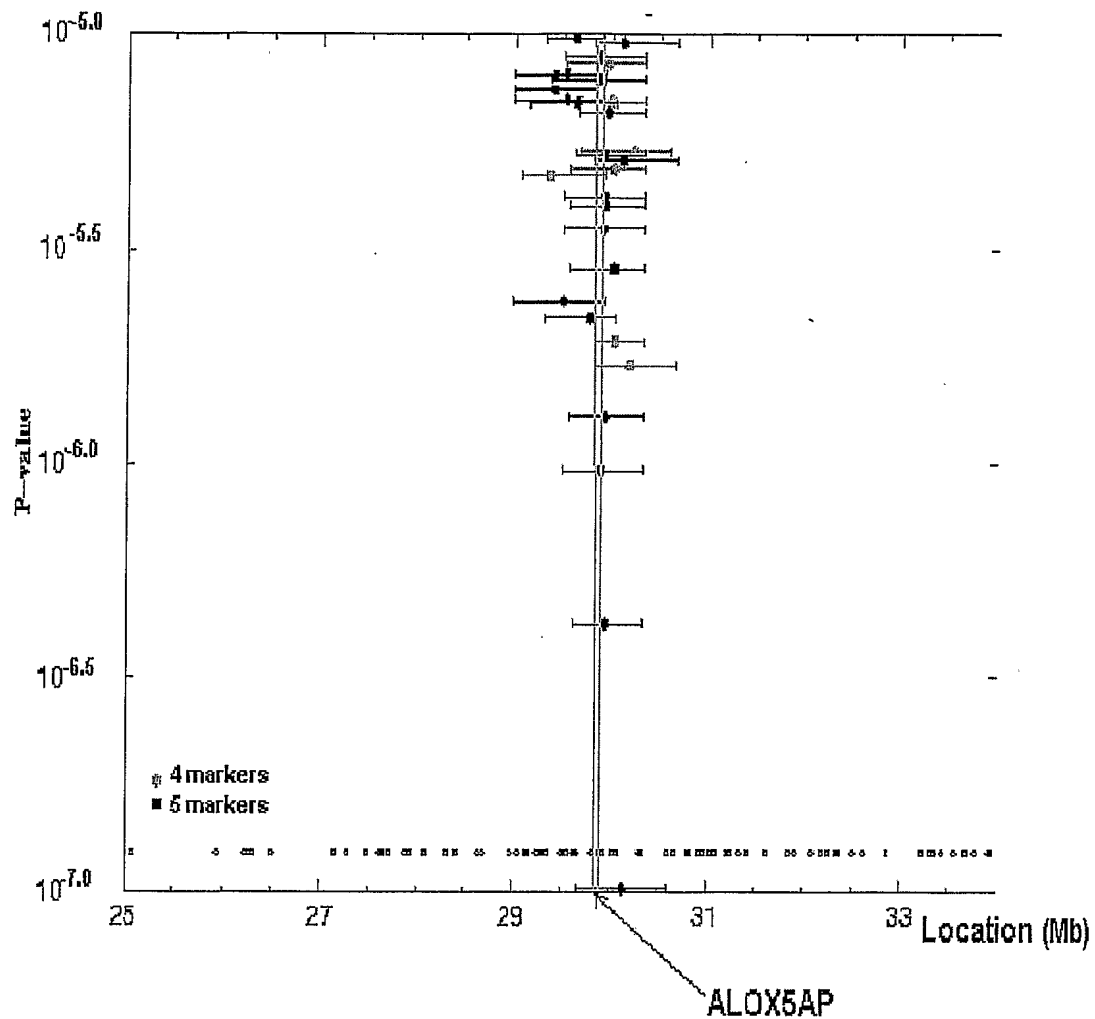
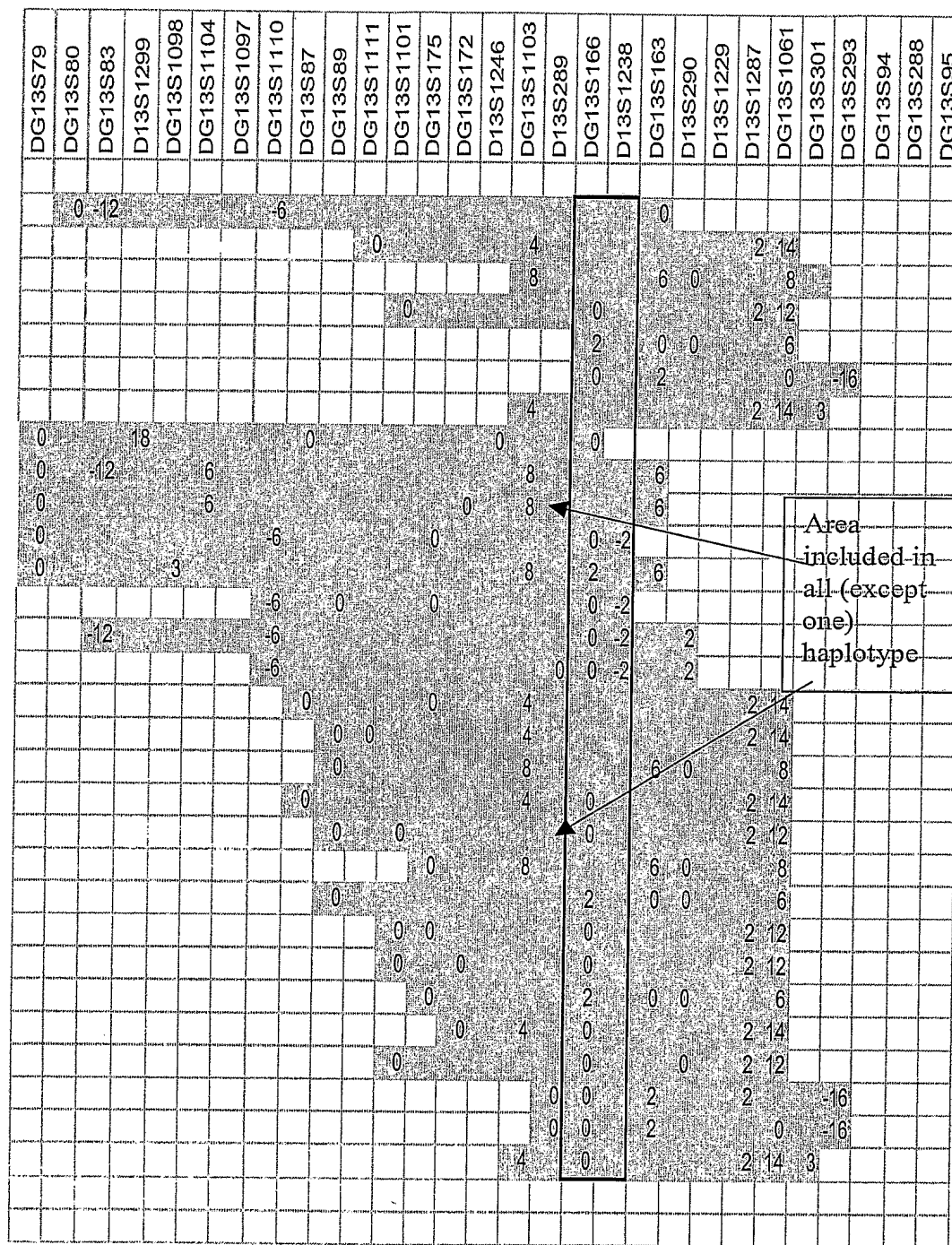


FIG. 3A

4/131

Haplotypes showing association (p value < 10^{-5}) with the disease



5/131

Markers and genes around the FLAP gene

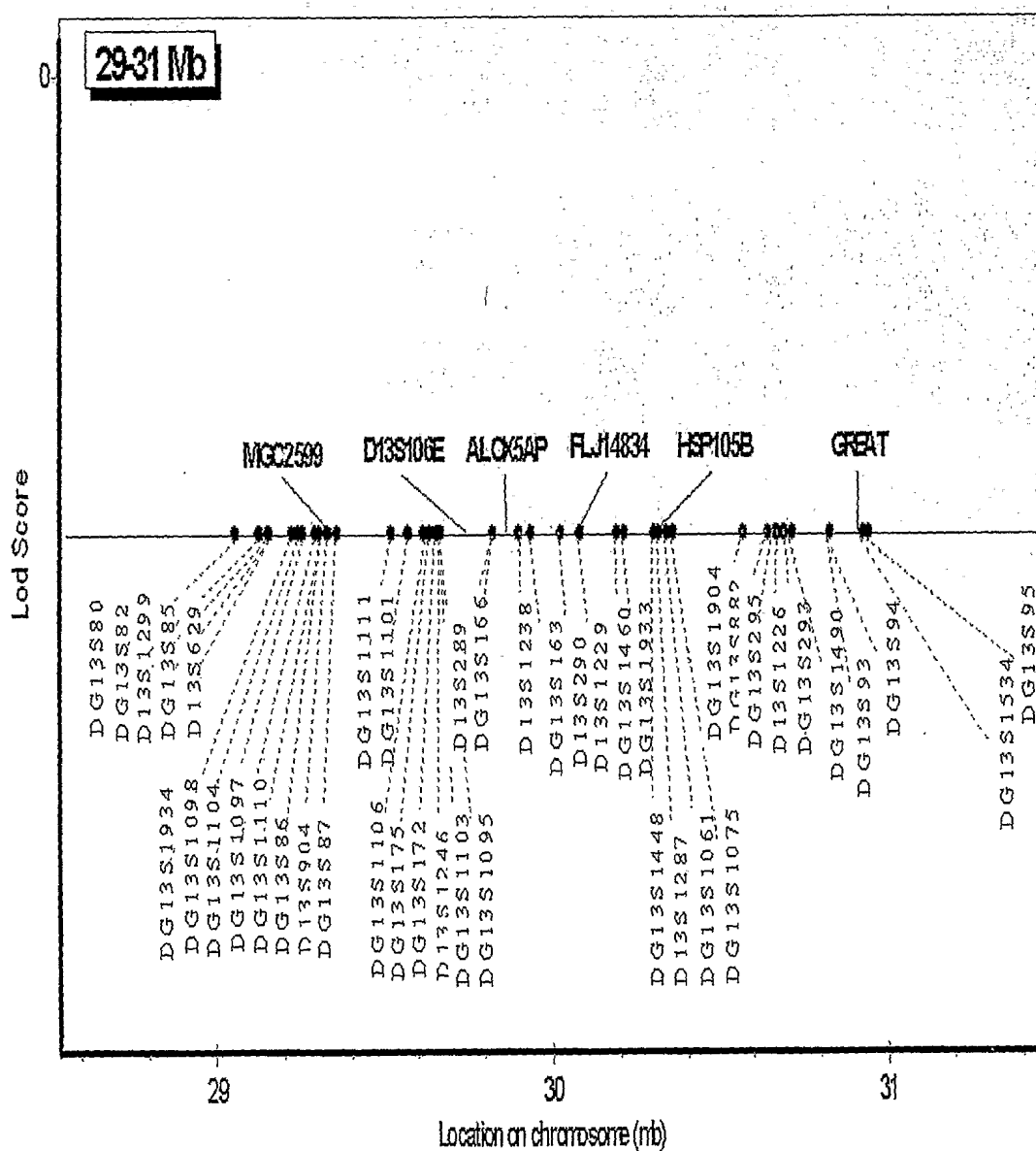


FIG. 4

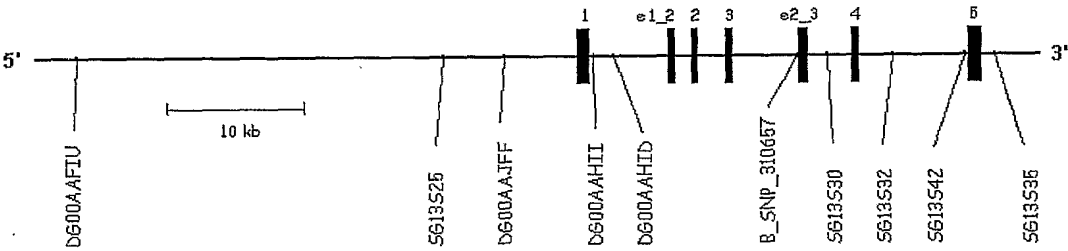


FIG. 5

tacagaccac	atgaaaagtg	actaaagagc	caaaagctgg	ggtggccaga	gagaaaatgg	60
aatccagggt	aaaatcctgt	tgttttagtca	tgtgggggtt	tttgggttta	tgttttttgt	120
ttttgttttt	tttgagatgc	agtctcactc	tgatgccag	gctggagtgc	agtgcagtgg	180
tgtgatctca	gctcactaca	acctctgcct	cccagggttc	agcaattctc	ctgcctcagc	240
ctcctgagta	actgggacta	caggtgtcca	ccatcacgcc	ttgctaattt	ttgtatttgt	300
attagagatg	gggtttccacc	acgttggcca	ggctgggtct	gaactcctga	cctcaaatga	360
ttcgccctacc	ttggccctccc	aaagtgcctg	gattacaggt	gtgagccact	gtgtgcggcc	420
ctagtcatgt	ggttttacaa	togtgcactc	agtattgaag	gatgcaggag	actggctcaa	480
aaggtgcatg	gactgtccac	acagaggccc	ccttagagcac	atttacctcg	gtcagtttac	540
cgtgggtcctg	gagctgttcc	tcagggtcag	acatgtgatt	tacttgttaa	ttatcattat	600
tattactgag	tggagcgggc	tccatttctc	agcagttggc	ttacttttagc	caagctcatc	660
aaaactgatt	atccacgcac	atgtatgcag	ctgaaggcca	atgcatttgg	ttgcagggg	720
gatctgcaac	tggcagcctg	tctgtctgat	cagggcccat	gccatgaaaa	acaagctgct	780
ccaggattgc	tgtggaatca	aactactgaa	gggcattgtt	aggtgatttc	agtgttcacg	840
catcagagcc	tgaactgtca	cgttcattct	tcagggatgt	gggtagacat	cctcattgac	900
ttaacagatg	ggtgttgcc	acttttctc	ccttgggttc	ccttttctga	cccttctagt	960
cacactcctc	ccctaagcat	gttcagtgtt	tgcctctgct	ccctaaatta	caatcacctt	1020
caaatacctac	ttccctgata	ttactcccag	attttgattg	gagttttggg	ttaccttgac	1080
ctcctcagtc	actcattttac	agagcaggca	tccttttgat	ttactcttgc	caatcaatct	1140
tttttttttt	taagagacaa	gctctcacta	tgttgccctag	tctgggtctcg	aactcctgag	1200
ctcaagtgat	cctcctgcct	cagcctcccc	aagtgcctag	attataggca	tgagtcacca	1260
tgcctggccc	caattatgtc	tatgggtgtg	ggatttaatc	aggtgcatct	caggtaacaa	1320
ctttagctct	taaagggtag	gccacagtcg	ccccacaaa	gaagaatcag	agaggttaga	1380
ccaggagggg	aggctaagg	tgaagatgt	ttgaagatgt	agctaaggag	attatgactt	1440
gtcctctgaa	tagtagggaa	cctctagagg	tgtgtgtttg	gggcagtggg	acagcttgat	1500
gaaatcaatg	tttggggcct	gcaggtaaac	tgcactagag	taaggagaaa	ccaaaggccg	1560
agagcccagg	taagaagcca	gggcaaggga	gatagatggg	acatgcaagg	cccagcctaa	1620
gatggtgcca	aaatcccaa	aggaaaaact	gcgttcaata	gacatttcac	agagagaagc	1680
aagaagactt	ggtgtattag	tctgttttcc	attgccataa	aggaatgcct	gaggctggtg	1740
atttataaag	aaaagagggt	tattttggctc	acgattctgc	aggctatata	aaaagcattg	1800
caccagcatc	tgctcagtc	caggaagcct	tcactcatgg	aagaagatga	agggggagca	1860
ggcacgtcac	atggcaagat	agagcaagag	agagatgagg	aggtgccagg	ctcctttaaa	1920
caaccagctc	tcactcatta	cctcaggggg	ggcaccaaac	cattcatgag	ggatccaccc	1980
ccatggccca	aacacctccc	accaggccct	gcctccagcg	ttggggatga	catttcaaca	2040
tgaattttgg	agagaagcaa	tatccaaaac	gtatcatttg	gtgactgctg	ggctgtagta	2100
gataatgaaa	aggaaaacat	tgatgccctg	tttttcttta	gttctatgat	tattactggc	2160
agcattttcag	gtatctttta	ttaccattat	acttgggttt	aggtgtgtgt	ttataagcac	2220
tgtatatgtg	taaagccgta	ttacctcagt	gtgatgagta	ataggggtctg	gctcctccac	2280
tctggttcac	ttagtacatt	taaaagaatg	agcaacttgt	aaaaaactat	ctatttggtc	2340
gactctcttc	tcaaacatct	taggaagaga	tgttcctgat	atacacaata	cattttgaag	2400
aataaggaat	agaatttggg	gagaaactga	ggatactgga	ctgattgagg	agggctggag	2460
gagaattgat	ctctcaatta	gtaagcgttt	attaagcact	tactatatgc	ccaagattgt	2520
gcgagatgct	gtggaagcta	caaaagccat	gtaacagctt	cttttcatga	ggaacttcat	2580
agcctcctcg	cgagtttag	ccttactctga	gaaataacca	gaagcaagca	acataaaagg	2640
aaatggaacc	gtgcccgtaa	gccagagcat	agagaccagt	ggtattttca	tacaaaactga	2700
gtgatgagcc	cttggaagcc	atggcagaga	caacaacaag	gtcagaagga	tggaaaaaaa	2760
aaatcatagc	ttgaaaggaa	taggcaaaact	ggggctggta	agtttagtaa	cggattccag	2820
agggatttat	cctttctttt	ttttcccgaga	ggtttattct	ttgcaaaaaca	cttttatgtg	2880
tattaatctc	attttagctt	tgacacaatc	cagcaaggga	ggcaagggtg	ggattaaaaa	2940
tggggaaagg	atttgagaga	gatttatgat	gtagaaacag	caggatttta	tgaccaatta	3000
atcttctggt	taagggtgag	ggagaggcaa	agatgcctac	cccactcac	tcatttcactc	3060
ataaaatcac	tcatacaaca	aatacttggt	gaggatata	tatgtgtcct	gtctatccac	3120
tggtagctggg	cctgcagata	cctggctgag	gctatgaggt	cagttacggt	gcccggcctg	3180
agcaggagggt	ggtggaggaa	gagtacggga	tgcagggtgg	tgttcaggtt	ccaggggatt	3240
tgggtttcca	ccctgtggat	ttgggagggc	tatgggacac	acagggtgaaa	ttgacaagta	3300
ggaattttta	cagaaagggt	agctttctct	ggacagaggt	ctgggatatg	aaatagacta	3360
ttcaattagcc	tataggttaag	agttaaaact	gagagtggat	taggttaacct	ccagagatct	3420
tgggttaagat	acttaacaat	tcagagcttc	agtttcttgc	tacgggaaat	taagaagata	3480
gtatctacac	cgcggtttta	tttttagatcc	agtgaatatg	catggacctt	gaatacagca	3540
gtgcattata	tatgttgaaa	atattattgc	caatatattta	ccactatagt	atctgcatct	3600
tgtctcgccc	atcagttttag	taaattcctc	aaaaaccaaa	gttttgcact	catattcctg	3660
cattattctca	ttatcttcat	atccccaggc	aaaggttaag	agttaaacat	gaataggtct	3720
tgacatctgg	gcttttggat	agaaattgag	aatattgggg	cacggccagg	cgtggtggct	3780
cacatctgta	atcccaacac	tttgggaggc	tgaggcaggt	gaataatttg	aggtcaggag	3840
tttaagacca	gctggccaac	attgcgaaac	ccgtctca	ctaaaaatac	aaaaatttagc	3900

FIG. 6A

8/131

tgagtgtggt	ggtacacacc	tgtagtccca	gctactcagg	aggctgagac	acgataatca	3960
tatgaaccca	ggaggcagag	gttgcatgga	gccaagatca	caccaccaca	ctccagcctg	4020
ggtgacagag	tgagattcca	tctcaaaaaa	aaaagaatat	tggtgctggg	cgcagtgcct	4080
catgcctata	attccagcat	tttgagaggc	cgaggaggaa	ggatgcctaa	aacccaagag	4140
ctagagacca	gcctgggcaa	aatggtgaga	ccccatctc	tacaaaaaag	catgttttta	4200
attagcaggg	catggtggcg	cacctgtggt	tccagctgct	ccagcagctg	aggcagaagg	4260
atggcttgaa	cccaggaagt	cgaggctaca	gtgtgctgtg	atagcaccac	tgcactccag	4320
cctggatgac	atagcaagac	cctgtctcaa	aacaaaacaa	aaatatttga	ttaattcatg	4380
aatatatattt	agatatgaaa	ggtgtatctg	atcaggaact	ggggcagaaa	gataattatg	4440
caaggcagaa	cgggtggtgct	gttgttgagt	ttgatttcca	aaagcacagc	taatgaatga	4500
ttaatgtgaa	aaagtgtttg	cacatagtct	gaccttgaa	aaatgaaggg	gaggggaaat	4560
ttagagaaat	ttgagagaaa	aattcagggt	atgatttagac	tccctgattg	tcaaaatgaa	4620
aggcggtag	aaaaccaggt	accttttaga	aaatattcaa	agcaaatttg	tggagactag	4680
gttttaggagc	actgttttaa	ctgagtacaa	ggatcaaaca	ggtgaccaag	gaatgttttc	4740
aaaggcctac	ttttttgtca	ttttcttttc	ttttcttttc	tttttttctt	gagagggagg	4800
cttgctctgt	catcagactg	gagtgcgggtg	gtgtgatctt	ggctcactgc	aacctctgcc	4860
tcccagggttc	aagcaattct	cctgcctcag	cctcccaggt	agctaggact	acaggcatac	4920
acccccacgc	ccagctaatt	tttgtatttt	tattagagat	ggggtttcac	catgttggcc	4980
aggctggtct	tgaactcctg	gcctcagcgg	atctgcctgc	ctcagcctcc	caaagcgctg	5040
agattacagg	catgagccac	tccgctggc	atgtcatttt	caattccata	agacattgga	5100
taaacacgac	tttcttagat	taatctattt	tttgaatgat	gttactctaa	ctccatgaat	5160
tagaacctgc	ctggggaaat	aaggaacata	tttatactca	gtttttaatt	tttcatccag	5220
tatgatattg	gagtaacagt	tcaaggccat	ggccagccac	tccatttaat	tttctggctc	5280
tcattaatta	ttttttcttt	tttagagaga	gagtctcact	ctgtggccca	ggctggaatg	5340
tagtagtgcc	gtcatagctc	gctgcagcct	tgaatcccgg	ggctcaagcg	atcctcccga	5400
ttcagccttc	cttaatagct	gggactacag	gtgcacacca	ccacacctgg	ctaatttttt	5460
aaaattttat	gtagagatgg	agtctcacta	tgttttctag	gctggtcatg	aactcctagg	5520
ctcaaatgtt	cttcccactt	cagcctccca	agcagctggg	attccaactc	tggctcttgt	5580
aattgatggg	tgcgtagggg	tgtcttctgt	gtaggtaacc	aaatctcaga	agttaactag	5640
aggaagaaga	atggtatccc	ggaactggag	atgtgcctac	tctgctatca	ggaaaacaag	5700
gtggggtag	ttcttgaaat	agtaattctg	ctgtgctagt	cttccttaga	cccaggaat	5760
gactgtgaag	agtcagtctg	tctttctgcg	ctgacagaag	ctaaagaaac	cagatacttt	5820
gttccctcat	tcagtcattc	atcaaacatt	tgtgccagag	agtgtggtga	ttgctggaga	5880
ggggtggatg	gagtaatagt	tcttgctcct	aggaatcttc	cagtccagtg	gagaagataa	5940
tactgggttc	caggtgccac	ctctgaatac	gtgtgtgagg	tgaaatgccc	accaggggtt	6000
agggccagg	tgcccttcac	acaggttgtg	acgctgaagc	tgagtcttat	gggatgagca	6060
ggaagtggcc	aaattagatt	gggagttgga	attccaggca	acaggagag	agcttagtgg	6120
aggggttaagg	catttgagct	atagtggag	actgcacttt	tatgagtga	tgacagaaga	6180
tgagactgga	gtggtagtca	ggctcaggag	ggccttgaat	gccattctga	tgaatttggg	6240
attttgccct	gaatatgaac	aacaaggagg	caagcaccct	gacgcctttg	ctttggaggg	6300
atcgccctcc	tatagactga	gtcgccctca	gagtggaggat	ggtcttattc	atctttgtag	6360
ccccattatt	ttctgacaca	catttcctga	gcaccttcgg	agtgagcacc	atgagaacta	6420
ggggtgtggg	agaaataaga	cagcctctgc	catgtggaga	gggtgatacc	cacacagctg	6480
tgcaacctgg	ggacagaagt	gccaggtaac	cccagagcct	gcaggagcgc	accccactca	6540
gcaggaagat	gtgtgtcact	ggcactttcc	taaagcaggt	gaggctttga	gaatgccaaa	6600
ccagccaggg	caagagagct	ggagagaagg	gaaggctgag	aggggagcgt	cgagtgtgga	6660
tggatcaatg	gcacctagct	aggtgtgctg	cagagaaagt	gcccgcggag	aggcagaatg	6720
actgacagaa	ggtggagggtg	gacacgttgg	ccagaaacaa	caaggaccgg	tcttcgtgtg	6780
agatggaagg	agaagtgtga	gggcagatgg	gactacaggg	tggggtacag	gggggtcagt	6840
gatagagaag	ggttcaataa	atgtttggctc	agtcatcggt	taagagggta	gcctccgtgc	6900
tacacttggg	tgggtctggg	aacgcagctg	acctttcctc	agccagattc	ctgtttcctc	6960
tggctgtagc	cctctccaca	actgaggaga	atatgccctt	cagtccagaa	gctagaaaga	7020
atgtcagcag	atctcaaatg	cttccaccca	agacgccacc	cctgcccact	cagctcattc	7080
ctccctgcaa	ggccccacta	atacctgttc	aggtcccctg	atgctgccac	ctgggaaggg	7140
gctggaaagg	gcttgaggcc	tggctgcacc	tccccgatc	cgatcctgat	tcaaaaggct	7200
tagctctctg	ccttggtcag	ccagtttagt	ctttctgtgg	ggactgtttt	cttctcttct	7260
caaactctgtc	tccaggccag	gtgcagtggt	tcacacctgt	aatctcagca	ctttgggagg	7320
ccgagaggga	ggctgatcac	cagacgccag	gggttcaaga	ccagcctggc	gaacatgaca	7380
aaacctgtct	tctactaaaa	atacaaaaaa	acaaaaaaac	tgtctacttg	atgtcctcag	7440
actgccccct	gagagatgg	gagtgaagtga	agacaaaggg	gggatccaaa	aagcatgctt	7500
ggctctaagg	tgattgtgtg	cactgaggta	agtgcagatg	aaatcattgc	ttcacactaa	7560
tccactagat	aggagtaaga	tggaaacggg	atgggcccctg	tgttgagaac	agttgagggt	7620
gaataacggg	tacagggggt	ttcgttatac	tctacttttg	caattttcca	taataagaag	7680
ttgaaaaata	ggtcgggcat	ggtggctcac	acctgtaatc	ccagaacttt	gggaggccaa	7740

FIG. 6B

ggtgggtgga	tcacctgagg	ccaggagttc	gagaccagcc	taaccaatat	ggtgaaaccc	7800
atctctatta	aaaatataaa	aatgggttggg	cgcggtggct	tacacctgta	atcccagcac	7860
tttgggaggt	caagggtgggc	tgatcacgag	gtcaggagat	ggagaccatc	ctggctaaca	7920
cggtgaaacc	ctgtctctac	taaaaataca	aaaaaatagc	caggcctggt	ggcacgcacc	7980
tgtaatccca	gctactaggg	aggctgaggc	aggagaatcg	tttgaaccca	ggaggcggag	8040
gttgcaagtga	gctgagatgg	cgccactgta	ctccagcctg	ggtgacaagg	gcaagactcc	8100
gtctcaaaca	ataacaacaa	caacaacaac	gacaacaaca	aatatataaa	tatatatata	8160
taaattagct	gggcatggtg	gcggcgccctg	tagtcccagc	tacttgggaa	gctgagataa	8220
gagaattgct	taaaccgggg	aggcagaggt	tgcagtgagc	cgagatcaca	ccactgcact	8280
ccagcctggg	tgacagagtg	agactctctc	tcaaaaagaa	aaaaaaattg	aaaaataaat	8340
cgttggtatt	ttgaaaatgc	tgtgaattga	cactaatact	tcattttttgc	cagtcattgtg	8400
ataaacgtaa	ttatttacca	gtgtaggggg	aaaaaagcaa	agaactgttt	tgtaggaaca	8460
ctgctggttt	gtagctctcc	ttcgttctct	cacctccaac	tcagtccttt	ggccagtatt	8520
atctggtatt	acccctcctt	ggtttttaatc	agagttaccc	ttcaacttca	ttcctcctgt	8580
ctgagcattc	ttgcctttat	ctgtttttca	tctgtaagga	taatcctagt	gtaaggaact	8640
tcgatttcaa	cctaaccctaa	accttcccct	gatctaagct	tttctttcca	ctgcagctat	8700
gactttgatg	tgatggggag	ttgctggttg	tcatacttgt	tttcaaatta	cccctcttgg	8760
ataaataatt	ttttttgtct	agctttatca	taaagggtctc	tgatgttttg	aaaagaagta	8820
tctagataac	caaccagaga	actgttgggg	ggaaaaaaag	caaaacaaaa	ccaaaagaag	8880
tatcagagca	ctgaaaatat	gcttagcaat	attaagcgtg	aaaaacaaat	ttcagatatg	8940
aaagattatc	ttggattgaa	accacattgt	gattgagaaa	cttgaagaca	aagtaacttc	9000
atgagtcaaa	agataagaaa	ccaactagca	agaacagcag	atgttttggg	tggagctttt	9060
gtcacaggct	gggggtgggg	aattcacatc	cagccttcta	actgtccttc	cctccaggcc	9120
caaccatct	cattccacct	tcttcagggc	tcctcattag	cttcaagata	aaacctgaat	9180
ttcttaaagg	gaatataaga	tgactctacc	tatctcccac	cttgatatctc	aaagtttcct	9240
tcttgaagc	ctttcttgac	tccccttaaa	aaaaaaaatg	gtgatttttt	ccatgggtgc	9300
tcccaaaaca	ccaaaataca	caatacattt	ctgtatgtat	gtaggatatgt	atgtatgtct	9360
ttatttttga	ggcagggtct	tgctatgttg	cccaggctgc	agtgcagtgg	ctattccacg	9420
gtgtgatcat	agcacactgc	agccttaaac	tcctgggctc	aagcagtcct	cactccatgg	9480
cctccctctc	cagtagctgg	aattacagac	actacgggat	caccagcccc	tgcaatacct	9540
ttattattgt	tttccctgct	gcaagttctt	tgagctcgga	cagtccttgt	gacctgtgca	9600
gcacctaaag	ttagcaccta	ggagttttctc	aaaaaaaaaa	aaaaaaaaaa	aaagaagctg	9660
agtaggatcg	gtgaccctac	agaattgtat	tatagcagcc	gcaaatgaag	atggctaatt	9720
aaacaaatct	gtaggctggc	aacagaaatg	ttactttcct	aacagaagag	gaaccttatc	9780
cataaaaagat	acagtataca	gactataata	acgattttatt	atttaataaa	atgattttatt	9840
ttattatttta	ttcatatatt	tttatttgtgt	gcttactaag	gagtcagcct	ctatgctaaa	9900
cactttatct	acattacctt	atttgcattt	atcctaaact	tttttttttt	atttttttgag	9960
acagagtctt	gctctgtcac	ccaggctgga	gtgcagtggc	gcgatctcgg	ctcactgcaa	10020
gctccacctc	cgggtttcac	gccattctoc	tgcttcagcc	tcctgagtag	ctggcactac	10080
aggcatgtgg	caccacgcct	agctaatttt	cttttttttt	gtatttttag	tagagacggg	10140
gtttcactat	gtcagccagg	atggctctga	tctcctgacc	tcatgatccc	tcgcctcggc	10200
ctcccaaagt	gctgggatta	caggtgtgag	ccaccgctcc	tggcctatcc	taaactttta	10260
tctgttttgt	tgtatccctc	tccttcacct	ccttttatatc	tcatcaactc	tgttaagagt	10320
gtggagacta	aggccggacg	ccatggctca	cgcctgcaat	cccagcactt	tgggagatgg	10380
gtggattgct	tgacaccagg	agtttgagac	cagcctggcc	agcatgggtga	aacccctatc	10440
ctattaaaaa	tacaaaaatt	agccgggtat	ggtggcaggc	acctgtaatc	ccagctactt	10500
gggaagctga	ggcagggtgaa	tcacttgaat	ccaggaggca	gaggttgcag	tgaggtggag	10560
gttgcaagtga	gccgggattg	tgccactgta	tcccagcctg	ggtgacagag	tgagaccctg	10620
tctcaaaaata	aaataaaaata	aaataaaaata	aataaaaataa	agtaaagtaa	aatctgcata	10680
cctagataaat	aatgcaacac	tgcaaatata	gtaaaaaatg	tgactgtaca	tgttacgcaa	10740
gtgaattttta	tgatgtgcct	atacatccat	gcagtatgta	cattatatct	caataaaaact	10800
ggtttttaaaa	tcctatgtaa	ggtttttctat	gtaaataaac	taaaaatgtc	tagaataaact	10860
gttaattgca	aggaaggaac	tgagatgggg	gatgggcctt	aaggagaaca	agtttgattt	10920
tttttatctg	tgactttctg	tatctgaatg	ttttccagtg	agcatatgtg	tttaacttgta	10980
tatttttggg	ctgttttatt	cactgctgta	atcctagcac	ccagatcagt	gcctacacgt	11040
agcagaggct	caataaaat	ttgttaagtg	aataaaataa	tgaattatac	tttaaatgta	11100
aaaaaaccca	agtggagtac	ataataactt	gatttggttg	tgtatggctg	actcaaaact	11160
tctaattttt	aaaattcatt	tctaaaatag	atttatggaa	ccaatgcttt	ttagcaattt	11220
gagaactatt	cttggaatac	tctgaatggg	tcctggctta	aaaaatccaa	gcactgaatt	11280
tgattttttg	ctgtaaaatt	tggctatgaa	aggagtttcc	ccagtatatc	ttttaatcaa	11340
tctgctataa	agcatgtaca	atcattttat	tttcttatct	aatatgagaa	aatgaggtgc	11400
tgtaactgaa	ctagctgta	actatgttca	atagtgactt	gatttgattt	tggattggc	11460
tttacattat	ctgattgatg	atttttttta	acaatagtga	aagtaaaatt	accagtagtt	11520
tgcaatccag	gttaaaatct	gtatctgaac	acctccttcc	ctgatgtact	tgcacgtata	11580
ttaaggtaaa	tacttgttga	cacatatcta	aaatgctgaa	ataatattgt	ctattagtgt	11640

FIG. 6C

ttaaatgtgg	ttactaatta	tgtgatgatt	atttacaaca	atcaaccttt	tatcttgcta	11700
ttgctaaaa	ggaagttttt	aattttctatt	taatgcattt	ataaatatat	aaaataatat	11760
attgatttta	atcttaccct	tcttctaaaa	caggggttct	taagcctttt	ggagatcctt	11820
aaggatctga	taaaagcagt	gaggccttgc	actgtaaaaa	cgtacacatt	taggttacag	11880
tgaaggccag	ccactgcact	ccagcccagg	caacagagca	agactttgtc	tctaaactaa	11940
actaaactaa	actagatgta	cacagttgag	gatggttcca	aacctaaagg	taataactct	12000
tggtctaaat	cattcaaatg	catggagcta	tccatagata	cttccacatc	caattttaca	12060
tatatatata	gcttaaaagt	atgtaatttg	accaaggttc	ctagcttttt	atattgatgg	12120
tgactttcac	atttaacctg	tggctcttca	gggtatccaa	ttcattttat	agaatattat	12180
actcagacac	agtgggtcac	atctgtaatc	tcacattttg	ggaggccaag	gtgggaggat	12240
cacttcagga	ggagttcaag	actagtctgg	gcaacactgc	aatacccat	gtctgcaaaa	12300
aaatttttta	aaaaattagc	caggtgtggg	ctgagtgcag	tggctcacac	ctgtaatccc	12360
agcactttgg	gaggccaagg	caagaaaatc	acttgaggcc	aggagtctta	gaccagcctg	12420
gctaacatgg	cgaaacccca	tcccaccttc	tcaggaggct	gaggcaggag	aatcccttga	12480
acccgggagg	tggagcttgc	agtgagccaa	gatcatgcca	ttgcaactcc	gcctgggcga	12540
cagagcaaga	atccatctca	aaaaaaaaaa	aaaagaaatt	aaaaaacaga	agttagctgg	12600
gtgtgatgtc	gcacacctgt	gatcccagct	actcaggagg	ctgaggcagg	agaatcgctt	12660
gaaccaggga	ggcagagggt	gaattgagct	gagatcatgc	cactgcactc	cagcctgggc	12720
aacagaatga	gactctgtct	caaaaaaaaa	aaaaaaaaaa	aaaattagcc	aggtgaggga	12780
gcacacacat	gtagtccag	ctatttgga	ggctgagtgg	ggaggattgc	ttgagccag	12840
gaattcaggg	ctgagggtgag	ccatgattgc	accactgcac	tccagcctga	gcaacagaat	12900
gggacctgt	ctctcaaaac	acacacacaa	gaatatcata	ctcaacttgc	atctcctggt	12960
gtcttagttc	atcttctgtt	gctaagacag	aatacttgag	actcggtaat	ttacaaatta	13020
aagaagttta	tttgacttat	ggttcaggag	gccaggtagt	ccaagaacat	ggcagcagct	13080
tctggtgcaa	gctttcgtgc	tgcactttaa	catggtggaa	aagcagaagg	acaagcagga	13140
catgcaaaag	agactgcaag	agtgagccaa	gctagctttt	ataacaacct	gctctggaga	13200
gggctcactc	ctgtgagagc	caattcactc	cctcgagaac	tcacttcacc	tgatggcatt	13260
aatttatacc	tgagggtctc	acctcatga	cccaatcatc	tcttaaaggc	cccactctct	13320
aactctgtta	catgggcaat	taagcttcca	agacaggaa	tttggggaga	cacatttccc	13380
caggcccgag	gaactcagat	ggctctagga	tgattgacag	acaggcttca	gattcacttt	13440
aaccaaatcc	cagtggcttg	gggcagggtt	tagttttggt	taattgaatt	cagcagtttt	13500
cttaattctt	caaacaaagt	cacataatta	tttaaatgtg	atataactaa	tggttgact	13560
tttcaagggt	ccttttttgt	cttaagatcc	taagaagtcc	aagactagca	aatatggttt	13620
ttaaagaaga	gggaatctac	aattaatgaa	ggtttatttc	tcatactttg	tgcttctgcg	13680
agaacaagaa	aagggtattg	tggtttttaa	atgtggtttg	ggaaatgttc	tgacaaatgg	13740
aaagatcagt	gttgggtcag	actgtgaggg	tgcttgatac	aaagagaaac	tcagtttgaa	13800
acaagaaaaa	agagaaacgg	gaaggacaaa	atgaagggaag	ggtgagagtt	gcaatttttg	13860
agaagtaatg	atcgagagac	tttctggtga	agagocaccc	aatctggaga	tcagagattc	13920
aacagaccca	tttcaggcca	aagcacacct	atcattcagt	tgtagttagt	agggaaaccc	13980
aaagggtttg	ggatgatctc	tgaacccttc	ttcgggcgga	agaatttgct	gattccaggc	14040
tgggcacatt	ggctcacacc	tgtaagtgtg	agccaatccc	agcaggttgg	gaggctgagg	14100
cgggtggatc	acctgagggtc	aggagtttga	gaccagccta	gccaacatgg	caaaaccttg	14160
tctctactaa	aaatataaaa	attagctggg	catggtagtg	cacacctgta	atcccagcta	14220
cttaggagac	taaggcagga	aaatcacttg	aaccaggag	gaggagggtg	gagtgaagccg	14280
agattgcacc	agtgcactcc	agcctgggca	acagagcaag	actccttctc	aaaaaaaaaa	14340
aaaacaaaaa	agaggctggg	cgcagttggt	cacacttgta	atcccagcac	tttaggaggg	14400
tgagacaggt	ggatcacttg	aggtcagaag	ttcaagacca	gtctggccaa	catggtgaaa	14460
ccctgtctct	actaaaaata	cagaaattag	ccgggtatag	tggctcatgc	ctgtagtccc	14520
agctactcgg	gaggctaagg	caggagaatc	tcttgaacac	aggaggtgga	ggtttcagtg	14580
agcccagggtc	atgccactgc	actccagcgt	gggccacaaa	gcaagacttc	gtcttaataa	14640
taataataat	aataataata	ataataataa	taatttgctg	attccttttg	ctagatttgt	14700
gtatttgggg	caagaatcat	tgaatttggt	tctactctta	tagctagacg	tggggtggtg	14760
gggggcataa	agggatagag	tgagtgatgt	agaccttgca	aaggaagcaa	gcctagccat	14820
ctctcctgat	accaccaca	gctcttatcc	ctctccagcc	cctcccgctc	ctgctgcac	14880
ccagtgggac	aaggaaaaat	cagtgagaat	ataaattcca	agagaatacc	atcaaaactg	14940
tccaacaaaa	agtcttaatt	gaccttgga	ggatatattt	tgagatggag	tctcactctg	15000
ttcccagggc	tggagtgcag	tggtgcaatc	tcggctcact	acaacctcca	cctcctgagt	15060
ttaagtgatt	gtcctgcttc	agcctcccaa	gtagctggca	agagaaatgc	aaatcaaaac	15120
cccaatgaga	tactatccca	cactagtcag	aatggccatc	actagaaagt	caaaaaataa	15180
cagatgcttg	cgaggttggt	gagagaaggg	gatgcttaca	cactgctggg	aggaatgtaa	15240
attagtccag	ccactgtgga	aagcagtttg	gcatctctc	aaagaactta	aaacagaact	15300
accattccac	ccagcaattc	cattactggg	tatatacca	aaggactaga	aatcattcta	15360
ccataaagac	acacacacat	gcgtatgttc	atgtagcac	tcttcccaat	agcataagac	15420
atggaatgaa	cctaaatgcc	catcagtggt	agactggata	aggaaaatgt	ggtacattta	15480
caccatggaa	tactaccag	ccataaaaaa	gaataagatc	atctcctttg	cagcaagatg	15540

FIG. 6D

gatagagctg	gaggtcatta	ccctgagggg	actaatgcag	gaacagaaa	tcagatagtg	15600
catgtttcca	tctataagtg	ggagctaacc	agttagtaca	cacggatata	aagaggggaa	15660
caagagacac	tggggcctac	ttgaggggtg	aggctgagag	gaggggtgag	atcaaaaaaac	15720
tacccgtcag	gcaccatgct	tattaactgg	gtaacaaaat	aatctgtaca	ccaagccccc	15780
atgacacaaa	atttacctat	ataacaaacc	tgcattgtgt	tccccgaacc	taaaatgaaa	15840
gttaaaaaaa	aaaaacagcc	tggccaacat	ggtgaaatcc	catctctact	aaaaatacaa	15900
aaagaaatta	gctgggtgta	gtggcaggca	cctgtaatcc	cagctactcg	ggaggctgag	15960
gcaggagaa	cgcttgaacc	cgggaaggcg	aggttgcagt	gagccgagat	cgcaccactg	16020
tactcaagcc	cgggtgacag	agaatcagtg	gtagatccaa	aaatggaatg	atgctggcat	16080
aatcattcga	agtgttcagt	gtgagtgaag	agagggcagg	gttgggtgcag	tagtattgac	16140
aagtacatct	gcattgaagg	gtcctgggta	cagtgaacag	tgaagaggaa	ggagccagcg	16200
aaaagagata	ggggatcatt	ttggaaaatg	agatgactga	ggatcaagg	ctcagtttat	16260
aattgaaggg	gagaaagact	gaaggctggg	gaggggatgg	ctttcgtgtg	tagaggaata	16320
tgagcactga	atttctaaga	agagaagaat	aaaagagaca	ctacttgtga	ggctccgggc	16380
atgacgggaa	tattgggtgg	cgggtgtgtg	ggtgtgtgtg	ttgcagggag	caggcattga	16440
tctgatggaa	ggaatgtctg	tgtggaagag	taaatagcca	ccagcctgaa	gttgaccagt	16500
aaaaaatccc	aaaacacatt	caactgagtc	ttatcctctt	aaatgactcc	aagtttcaag	16560
aaaatttgcc	tggacaagca	atcctctctc	tcacccatta	aagatactgc	attttacttt	16620
tgaaaagcca	acaacaaaga	tgcaacacct	ttttaataaa	gaatctcccc	ctttgatggc	16680
ttagattttt	agctgcctag	agaaaaggcaa	ctaggacgc	tgctttcttg	gtccattccc	16740
ctatacgctt	ttaggtaagg	tttttgtttg	atgcacagt	tctgaactgc	catgtacttt	16800
tgcaaaagtg	catttcctgg	gtgtgtgtgt	tttatggcaa	ttgctaccat	ttcttctaata	16860
cacttgccac	aggtgtccca	tagctatcag	gggtagaact	gaggggtgcag	cggggaggcc	16920
catgtgccag	gctgtgagtc	taggcagggt	gttggaaacg	cagttgttta	ctaggccttg	16980
gtgttttgta	cattactgat	atgaagcctg	gagggaggac	tggtgtgcag	atgatctgca	17040
tctgctatca	ggagcaagaa	acattgaata	aataggcaaa	attgctaagg	aaaaaaatgc	17100
tctcctaact	tcaattcttt	tccttttctt	tcctttgggc	accccatct	tcagggtgcc	17160
aatagtgtca	taaaaaatgt	tttcttaaaa	aaccctaagt	gtttgagttg	actccaagtt	17220
aatatatatc	aacattaaaa	ctaaaaaagt	taaaggcata	ttaggctgag	ttatagtagt	17280
aaaacagcag	agcaaaggat	acaatgggtc	cactctagat	ggtttagtag	tctagatgat	17340
tatatctctg	tttaggcata	ctgttttgat	aaggacactg	accaactgaa	ccacaactcag	17400
agaaaagcag	ctagggctct	ggaaccacat	tacctgagaa	atgactcaag	gctctgaaaa	17460
agaagaccga	tagttatctt	tatatattaa	agggttgtct	gccacatagt	aaagggaaat	17520
attggccggg	tgtagtggtc	cacacctgta	atcccagcac	tttgggaggc	caacgcgggc	17580
ggatcacagg	gtcaggagat	cgagaccatc	ctggctaaca	cgggtgaaacc	ccgtctctat	17640
taaaaaatata	aaaaattagc	caggcgtggc	ggcacgcgcc	tgtagtccca	actattcggg	17700
aggctgaggc	gggagaatgg	tgtgaaccgg	ggaggcagag	cttgcaagtga	gccgagatgg	17760
tgccactgca	ctccagcctg	ggcgacagag	cgagactccg	tctccaaaaa	aaaaaaaaaa	17820
gaaaagaaaa	agaaaaggga	aatattcagt	gtcgtctctg	aggacagagc	taggaccaat	17880
gggagggagt	gaccaggaaa	tatatatttg	attaaaaata	gaaagaaatt	tctacgaatt	17940
agagttgttc	aaaaggagag	tggaaaaaag	caaactgcag	aacagcatta	gaagtacaat	18000
cctatttgac	tttgaaattg	cacacagaag	tccttgaaca	gtggagagac	aggatcattg	18060
cttttagaaaa	acgatactgg	tggcaagcta	gaaggtgcgt	gagaaaaagga	ggtaaggatg	18120
gcagtgaata	gcccattgaa	atagtccagc	caaaagatga	tgaggccctta	aactggggta	18180
gtagcagtg	gcatcatgaa	ttagggatga	cccaattgtc	cgtcgatgga	taaatggaga	18240
aacaaaatgt	agtctctgca	taccatggaa	tatgattcca	tcttaaagg	gaaggaaatg	18300
ctcacacaga	ctacaacatg	gatgaacatt	gaggacattg	tgttaagtaa	aataaaccaa	18360
tcacagaagt	acaaatactg	catgatttct	cttatatgog	gtggaatata	tactcttaca	18420
tactctacca	cctagagtag	tcaaattcat	agagacagaa	agtagaatgt	tagttggcac	18480
aggggttggg	ggagggaag	gggagtggga	gttagtatatt	aatggataca	gagttttaat	18540
tggggaagat	gaaaaagttc	tggagatgga	tggtactatt	ggttgcacaa	tcatgtgaat	18600
ttacttaatg	caattgaact	gtacacttaa	aagtgggttaa	ggccgggagc	agtagctcac	18660
gctgtgaatt	ccagcacttt	ggaaggccaa	ggcgggcgga	tcacctgagg	ttgggagttc	18720
gagaccagcc	tgaccaacat	gaagaaaccc	tgctctctact	aaaaatacaa	aattagccag	18780
gcttgggtgg	gcacgcctgt	aatcccagct	acaccggagg	ctgaggcgag	agaatcgctt	18840
gaacctagga	ggcggaggtt	gcagtgagcc	gagatcacac	cattgcactc	cagcctgggc	18900
aacaagagcg	aaactccatc	tcaaaaaaaa	aaagtgggta	aaatggtaac	ttttatgtta	18960
tgtatatatt	accacagtaa	aaaacacttc	taaattttaa	acaaacaagg	ttagagataa	19020
atttgagaaa	gagtttaaa	atacaaatga	aagtagagta	aaggtgattg	ccaagctatc	19080
tagcttagct	gattaggtag	atgatgaggc	cattagccaa	gaaagagaa	attaaccaag	19140
aggacaaaca	gatgattagg	agctcagttg	gagaaatgtg	aagtttgagt	ggcctggcaa	19200
acactcaatg	ggagattttt	aaaataacaa	ctttactgag	ttgtatacaa	taaattgcac	19260
ctattttaaag	tgtgccattg	aaagagtttt	tttttttaat	aaaggctagc	atttattaga	19320
tgcttattac	agccattttt	ccaatttttt	tttttaatga	catttcacta	cgttgcccaa	19380
tctgggtctg	aaatcctggg	ctcagcaacc	ctccccacc	tcagcctcct	gagcagctgg	19440

FIG. 6E

12/131

gattacaggt	gcacacaacc	acacctggct	caattcaaag	agtttttgtt	ttgttctatg	19500
taagagatga	gtgtcttgct	ttgatgcccc	ggctggagtg	ctgtgggtgtg	atcatagctc	19560
aatgcagcct	caaactcctg	ggctcaagag	atcctcccat	tcagcctcac	aagtagctgg	19620
gaccacaggc	gtgtgcgcct	cgcttggtca	atcttttcat	ttttattttt	gtagagatga	19680
ggctctgcta	tcttgcccag	gctgggtctca	aactcctggc	ctcaagtgat	cctcccgctt	19740
tggcctccaa	agtgtctagga	ttacaggcgt	gagccactgc	acacagccag	ttcaatgcac	19800
acatctgtga	acccaccaca	accaaggttc	agaacattcc	tgtcatcccc	cagattttct	19860
cgtttccctt	atccttctcc	atgtctgccc	cggaaaacaa	ctgagctttc	tgccacttac	19920
cgattagttt	gcatttttcta	taaataaaaa	catataatat	gtagttttgt	gaggaggtct	19980
gacttatttc	actaagcata	aagattttga	gagccatcca	tggtgtgagc	attagtagtt	20040
cattcctggt	tattactgac	tcatgttgca	ccttttgact	atgctccaat	ttgtttatgg	20100
cataaacaaa	ttggtttatg	ccagttgttc	aacatttggg	ttgcttctag	tttttaacta	20160
ttacaaataa	acctacaatg	aacatttgcg	tacaagtctt	tggtgtgaaca	tatattttta	20220
tttttcctgg	ctgagtaccc	agaggcagaa	cgacgaggtt	gaatggcagg	tgtatgttta	20280
actttttttt	tttttttttt	ttttttgaga	tgtagtctca	cttcgtcacc	tggtccaggct	20340
ggagtgcagt	ggcaagacct	cggtctcactg	caacctcccc	ctcccagggt	caagcaattc	20400
tcctgacctca	ggctcctgag	tagctgggac	tacaggccca	cgctaccacg	cccagctaata	20460
ttttgtattt	ttagtagaga	cagggattca	ccatgttggc	ctggctgggtg	tcgaactcct	20520
gacctcaggt	gatccgctg	cctcagcctc	ccaaagtgcg	aggattatag	gcagcagcca	20580
gcgtgcccgg	ccatgtttta	cttttaaaaga	agctatcagt	tttccaaagt	gcttgtagca	20640
ttttacattc	ctatcagcag	ttgtacatct	tcaccaatac	ttggtattgt	catcatttta	20700
tccttgagcca	ttctcattgg	tggtgtagtgg	catctcactg	tggttttaata	ttgtgttttc	20760
cagataacta	acaatattga	gcattcttttc	atgtaacttc	tttttataaa	gcattttgtt	20820
gtcttttgcc	tactgaaaaa	attgcattgc	ttcttctactg	agttctaata	gccctttata	20880
cattctagat	accagtcctc	tatatgtatt	gcaaataattt	tttcattcta	gtcctttatct	20940
tttttcattt	ttttttaatg	tatgaataat	ttttttttga	gatgaggctg	actgtgttgc	21000
ccaggctggt	ctcaaaactcc	tgagctcaag	caacctcccc	acctcggcct	cccaaactgc	21060
tggaattaca	ggcatgaacc	actgtgccta	gccttttcat	ttacttaaca	tatctttctt	21120
tccttttttt	tttttagagg	gagtccttgc	catcgcccag	gctggagtgc	agtggtgcaa	21180
tcctggctca	ctgcaacctc	cgctcctctg	cttcaaggca	ttctcctgcc	tcagcctccc	21240
gagtagctgg	gactacaggt	gcatactaoc	acgcctggct	aattttttgt	atgttttagta	21300
gaaatggggg	ttcaccttgt	tagccaggat	ggctcttgatc	tcctgacctc	ctgatctgcc	21360
cgctcggcc	tcocaaagtg	ctgggattac	aggcgtaagc	caccgcacct	ggccaatgat	21420
atcttttctaa	gagcaaat	tttaagtgtg	acaagggtta	gtttatcagt	tttctctttt	21480
gtgaaaagttt	gctttttttg	tcctaagaat	tcctcctctgt	tttaactcttg	gagttttcta	21540
gattgtaccc	ttaggtctcg	cattcatttt	gagttgtatt	ctgtatgtag	catgatgtaa	21600
aagtcaaaagt	ttatttcttt	ttttttcttt	tttttttttt	gagatagggt	cttgctttgt	21660
cacccaagct	agaccagtgg	catcatcatg	gctcgtgca	acctctgcct	cccaggctta	21720
ggtagacctc	ccacctcagc	ctcctgaata	gctggaatta	caggcggtgca	ccaccacaca	21780
cagctaattt	ttatat	tgtagaaatg	gggttttgcc	atglttgcca	ggctggctat	21840
ccgcctgcct	cagcctcctg	aagtgttgga	attacaggca	tgagccaccg	tgcccagcct	21900
caaggtttgt	ttctttttcc	atatgactac	ccagttgttt	tagtaaaaatt	ttgtgaaaag	21960
tccttcttat	gggccaggcg	cggtggctca	cgctgtaat	ctcagcactt	tggtgaaacc	22020
aggcaggcag	atcatctaag	gtcaggagtt	caagaccagc	ctggctaaca	tggtgaaacc	22080
ccgtttctac	taaaaatata	aaaaattagc	caggcggtgt	gccacacgcc	tgtaatccca	22140
gctactcggg	aggctgaggg	aggagaatcg	cttgaatctg	ggaggcagag	gttgacagtga	22200
gccaagactg	cgcttttgca	ttctggcttg	ggcaacaaga	gcgaaactcc	gtctcaaaaa	22260
aaaaaaaagt	atttttgtgc	tgaatgtctt	accaactttg	ttgaaaatga	attgaacata	22320
tatgtctggg	actatttctg	gtgtctatct	acttgcaggt	gaagatatct	agtggaaatgc	22380
gtgacagagg	gaattagagc	tacttttttg	ctgaatacca	gcagtgtacc	tttgccctaca	22440
cacagagaaa	agcacgtctt	caggaaagcc	tacctaccaa	catcaagttt	gcataatcatt	22500
tcctgatttt	ttttttaaga	gacagggtct	tattctgtcg	cccaagctgg	aatgtagtgg	22560
tgtgatcata	gctcattgca	gcctcaaatt	cttgggtctta	agcgatcctc	ccaccacagc	22620
ctcccaaatt	cctaaattct	tttttattcg	ccgaattcct	aatttttttt	tttttttttc	22680
tgttcagaca	gtctcactct	gttgcccagg	ctggagtgc	gtggcaaaat	gtcagctcac	22740
tgcaacctct	gcctcccagg	ctcaagtgat	tcctgcgcct	cagcctccca	agtagctggg	22800
attataggca	agcactacca	cgccaaactaa	cttttgcatt	tctattagag	acagggtttt	22860
gccgtgttgg	ccaggctggg	ctcaaaactcc	tagccccaag	tgatctgccc	acctcggcct	22920
cccaaagtgc	tgggattaca	ggcatgaacc	accacgccc	gcccaaattc	ctaaattctt	22980
aattgaaata	cttatctcat	atgactcttt	gtagagccaa	gacctacagt	gataaggcaa	23040
gggaaaatat	taaaacctcg	gttcagactt	gggtgaaggca	taatggcaaa	aagtatttgg	23100
gatacctgat	tccttgacaac	actaaacata	tttattat	ctgtgaaaaa	aattttacagg	23160
tcaaagaatt	gaaaatgcct	ggaagatagc	taaaggatct	ggaggctttt	ggggcagaca	23220
gtcaggatct	ggacatcagc	aaactctcca	gctttttttt	tttttttttt	ttttgagacc	23280
agcgcagtgg	ctgatgcctg	taatcccaac	attctgggag	gccggggcag	gcggatcact	23340

FIG. 6F

tgggggtcagg	agttcagggc	caacacgggtg	aaaccccgctc	tctactaaaa	ttacaaaaat	23400
tagccggggc	tgggtggtgca	tgccgtgtaat	cccagctact	caggaggctg	aggcaggaga	23460
attgctggaa	ctcagaaggc	agagattgca	gtgagctgag	atccttgctac	tgactccag	23520
cctgggcgac	agagcgagac	tccgtctcag	gaaaaaaaaa	aaaaaaagaa	attccatttg	23580
aattggtcat	ttaaaaggat	agaagactgt	gctgaagaac	atgcattcag	aagtgagtga	23640
cccagtgggc	caaggaatct	attcgtatcc	tgactttggc	acacatatta	acagtgttaa	23700
cctctgttcc	tcctcctagt	gagagctaca	cgtgctatta	ggtcaaatac	atagctactg	23760
tttaactatg	cttattttaa	atgagtaagt	taaaaatatg	taccgaacaa	atccttttcc	23820
acttacacat	gctgtatttt	ttgtttttac	aactttaaat	ttctatcctc	ttcccaccag	23880
tacaactgca	tcttcttgtt	aagaaaatag	ttaacttagg	aattaatttt	atatccttca	23940
ataagagttt	ttttgtttgt	tcattgtgtt	gagatggggg	tctcactata	ttgcccaggc	24000
tggtctcaaa	ttcctgggct	caagtgactg	tcctgcctca	acctactgag	tagctgggac	24060
tacaggcacg	tactactgca	ccaggcttca	acaagagttt	ttagaagtgc	ctagaaatta	24120
aagttctagg	gtttgttact	gttgagttaa	tggtgtttct	gaagaaagag	tgtcaaatac	24180
atcagttgct	aagcctgctc	ccttaaagtc	actcaaaaaa	gtatttagac	tccaaggcaa	24240
tcaacataaa	ggaaaaatta	tttttcccaa	catttgtgtt	tctgaatgct	tgctgtgctg	24300
aatattggca	ctgaatgttc	atgtttaacc	ttttgtctaa	ttatttcatt	tcagggtcctc	24360
cttttaggct	attattatta	tatgtatata	tgtatgtgta	tgcatctctg	tatgtgtgta	24420
tgtatgttag	gtgtgtggag	gacagcataa	gctatcttta	agtttcccat	aattgaaaag	24480
ttgtatgggc	acagtggctc	atacctgtaa	tcccagcact	ttggggaggct	gaggcaggag	24540
gatctcttga	gcccaggagt	tcaaaaccag	cctggggcaac	atagtggagc	cctgtatcta	24600
aaagtaataa	taataataat	aataataata	ataataataa	taataataat	aataaaatta	24660
aaaattagcc	aggcttgtag	ccccagtcac	tcaggaggct	cagatgggag	gatcgcttga	24720
gcctgggagg	gcaagactac	agtggagctg	gttttgggcca	ctgcactcca	gcctggggca	24780
cagagagaga	ccctgtctca	aacagaaaag	aaaagagaaa	gttgatagct	ccctggaatc	24840
acattaagcc	agtggatgtc	tgtttactac	tttgaatctt	ttgggtctaa	aattttttgt	24900
attattgcca	tagcagcaat	tcagatccat	ttcttagtga	tgttacaaca	actatcataa	24960
tatccaaatt	agaaaataaa	aatgctggta	agagtttggt	tttgttttgt	ttagtgatag	25020
tttaaatatt	tattgaattt	ttattatttg	aagtttactg	gtcggctata	attaattggtg	25080
tctgtttttac	acgctattta	gtatatgaag	tttgtatgac	cacctgggtg	atttggtgtg	25140
gttcaaaagat	tacacaacaa	ttctgttaatt	ctttaaagac	tttggcaaat	gttttctccc	25200
ctcaatttta	aatcattgtt	ttgtaacgaa	atttttaatta	gaaaaaaatt	gtttctttttc	25260
taagtgcagg	cttctccatt	gagccaataa	agaattttgt	tgaaaataat	tcccagcctc	25320
tagaactact	aagagtataa	tttttttccc	tttaattagt	agcttagaat	ttttttttaa	25380
ccaatgccaa	atgcaatgtg	agctcaagtt	tttagttcag	ttctaaactt	agaaccogtg	25440
atttttcaagt	gggttctaaa	tttggcaaaa	tgtcttctcc	ctgccatagt	atttggtgtg	25500
ttccatttct	taagggttca	tatgtcttat	tttctaagca	agcaatactg	ttttccttca	25560
ctattttaata	atttttccat	ttcctctttg	tggaaatacca	aatgtgggtg	aacctttttt	25620
agcccgtaaa	ataaaataga	tacggcagct	ttttgaaaga	aaaaggggag	gaaatggtaa	25680
ggggggaaaaa	agtcatttag	cttgcttccc	tcttacaagg	aaaagacata	ctgtatgtct	25740
tggatattga	attacacaaa	gtttatatat	agggttggtg	aaatcatcaa	gtcagaattc	25800
agttcagggt	cttatttttt	ctgcaaccct	ctgcataaat	gcaaaaagagt	cccgaacctc	25860
tcctgaggaa	aggatacgtg	aaacagcatc	ccattcgatc	accacataaa	gaagcctgtt	25920
caacaaagcc	atccttcccta	gtctgtctct	tgccaagtat	ttcatggcgc	tccttgcaga	25980
tgaaggcacc	aagtgttgaa	agcagaactc	actagggtgca	gtgctcaggc	ctggcaagct	26040
aggggcactg	gcctctgaag	agtatagggtg	gttactgtgt	agatgtttga	ggtagtttga	26100
aaaagccact	tccatccaca	aagtgttgga	gaaaagacac	ccaggatctc	tccccaaaac	26160
acaagaccac	attcactgca	ttctcacact	caactcgatt	gatctctgct	gttcagctcc	26220
ctgggtcagg	tctctcccta	tcattgtccct	tgtatccttt	tttctcctgt	tacaattctt	26280
tcataaaaaa	aaaatgaccc	agaggaaata	agaccggcat	gaagaaaaag	gtgaaatgag	26340
gttttttatcc	ccctcccgca	cccaacattt	ggaatgcggt	gcagtccctc	gggcagcact	26400
cctctgcagc	agactgtatc	tggtggagca	gcttcccttt	cttcccatga	tcattgttgt	26460
taggcatttg	taaatgtcac	cccaaccgag	agcaacaagg	ctcaagcttg	ctctttctca	26520
gagatagagc	atttcccagc	acttccctgg	aggctcttggc	aaatagggaat	cccggttcaact	26580
ctagtctctc	tggtcctacc	ctcttctctg	ctggggaggga	agaaccatcc	agctccttct	26640
agcagcaggc	agcctccagc	aagagtggcc	ttgacagctc	tgtccaacag	gttccctctg	26700
tttatttttc	tcttgcttcc	ctgggtgccaa	gaggcagagga	atacttaaga	tattttccac	26760
tcccagcctt	cctggatact	aagcattcag	actaccagat	tgtgggctgt	ggcagcagta	26820
gattttccag	tatggactgc	cctcccgctca	tccataccac	tgccattggc	agctgtctcc	26880
tctccccag	agccggcaaa	tggttggtaga	attccattga	cctcagcatt	cctagagtgg	26940
ctagaattga	cttgaacatc	caacctttaa	gggaatgcag	caaagtgaac	cagccagtg	27000
actgcccattg	tgggaccata	tgggtgattc	gagcttgagg	gagtaagaaa	tcgaaatggg	27060
ttcagatcag	cagaccagac	tatatgccag	cctctgaccg	tgaagcaaa	ggccattctg	27120
tgagagaaca	ttgttgctgt	accatgtcag	cctcaaacct	ttagggtagt	gccacacaac	27180
attcctgggt	ttccttaaca	ataccttatt	tatctggcct	tgtctccaac	atccctatct	27240

FIG. 6G

tgggcctcta	tcatcagtea	tagtggtttc	atattaaata	atctaataga	aaaagcatga	27300
atagaaatca	aggggtcgag	cttcagctct	gctgtaagg	ggtgtatggc	cccgggcaag	27360
gcaactgact	tctctagatc	caatttcttt	catctaagac	atagggatgc	tggatttgat	27420
tataactgtg	ttctaaaatt	ccataaatct	tccttaaact	actacttact	agtctaata	27480
acagcaaaga	gtatttataa	tactattgta	agatactgta	atattttccc	cataagcgtc	27540
cctaagttac	tttgggtcaa	ctttaaggaa	ttccactatt	tctagtcttg	taggttcacc	27600
ctacctgtgc	ttttcatgac	ttatcttcc	catgctcccg	cttttctctt	gatgttagtg	27660
attgcagatc	tgctgtcttt	tcttctcttt	atctactttt	atttataagt	ctcagcatgc	27720
acttgattat	ttttgttgcc	catctctaga	gagacctcg	ctctaaaaaa	agtcataggt	27780
actcaaggca	ggacactggg	gttttccgtg	ttttccgggtg	acaccacaca	gtttgggtggc	27840
tttgtgatgg	ctgctggcatg	ctgagctggg	gccctttggg	ggctgcccc	agtgtctccc	27900
aagttgcctt	cctatgttat	aagtgggagt	taggggtctct	catcttaaaa	gtacatttga	27960
aatgttttcc	tgctgggcac	agtgggtcac	acctgtaac	ccagcacttt	gggaggccaa	28020
tatgggtgga	ttccttgagg	tcaggagttt	gagaccagcc	tgaccaacat	ggtgaaaccc	28080
ttctctacta	aaaatacaaa	aattaactgg	gcgtgggtggc	tcataacctgt	agtcccagct	28140
acttggggagg	ctgaggcagg	agaaccactt	gaaccgggga	ggtgggggatt	gcagtaagcc	28200
gagattgcac	tatggcactc	cagcctgggc	aacagagtga	gactctgtct	caaaaaaaaa	28260
aaaaaagaaa	aagaaaaaaa	gaaatgtttt	ccatgaaatg	cttcaactctt	tgctatatta	28320
atacttatct	cccatttttt	gcacattttac	ccagctgtga	gaggtctttt	ggctgtttat	28380
ccccttgggt	ctttgtctct	tggaagaaga	gtaattctata	gaataaaaaga	ttgcactgtg	28440
tatttccact	tccatgtcat	cttcccttct	cttctcttct	cttcccttct	cttttcttcc	28500
cttctcttct	tctctctctt	cctctctctt	cctcttctct	cttctctcta	ctcctcctcc	28560
ttcttttctc	tctctctctt	tctctcttct	tttttttgag	acaggggtctc	acaatgtttc	28620
ctaggctagt	tttgaactcc	tgggctcaag	cagctctctct	gccttggcct	cccaaagtgc	28680
tgggattaca	ggcgtgaacc	actgcgcctg	gccatttttt	tcttaatggg	gaaaacaaaa	28740
aacaaaacaa	tgtaataagc	tcttatcccc	atcccagtc	ctgagacaga	gtagcgggtg	28800
ttgggggatg	gaggggtgag	aacgtgggtg	agatcctact	tcaggaatgg	caaaatagca	28860
tcctgcttca	ctcagtttta	gtagcaggta	tagagtagtt	ggtagcaaa	ctggtaata	28920
actcttattc	cttcattact	ttccccact	ttatcatttt	agacatttaa	ttatgaattg	28980
agtggctcct	ggaggttaga	tgctggggaa	aatgggggag	aaagcacacc	ctgccctgca	29040
ggggcttaca	gaggtgaagg	tcacagacgc	ctgggtagta	cagacctggg	ccctggagac	29100
attgccaagg	aggggcagct	caggctggga	tggggggtac	caagggactg	cttccccac	29160
agccaagctc	tgaatgggat	ggtcaggggc	agcttctcag	agctgaaaga	caagcatgag	29220
ttggacaggt	gtaagggtat	cctgctggaa	agacatcaag	gcctgagaga	gcatgaccat	29280
cccaggacct	cccagtggct	caggatggga	gcttcagcat	gggcaggaca	gagaagcagg	29340
gctgaccat	gagtggccta	ggatgctctg	ctaagagctg	aacattcggc	tgggtgcagt	29400
agctcaaacc	tataatccca	gcacttttag	aggctgaggg	aggaggattg	cttcagccca	29460
agagtttgag	accagcctgg	gcaacatggg	gagacaccat	ctctacaaaa	aattttaaaaa	29520
ttagttgggt	gtggtggtgc	gtgtctgtgg	ccccaaactac	tcaggagggt	gaggaggagg	29580
gatcgcttga	gtccaggagg	cagaggctgc	agtgaagcca	gatgatgtca	ctgcactcca	29640
gcctgggtgac	aaagggagac	cctgactcaa	aaaaaaaaaa	aaagaaattt	gcacgttctc	29700
ttgtgggcaa	caggagtgca	tgcaaggaat	atttgaagcag	aggaacatca	cgatcataat	29760
gtcataattt	accttagaaa	cgctactcgg	agtttcttaa	cactaaggcc	caggggttga	29820
gtagagttag	caggagaagg	tggcctcgga	aatgaaggga	agtgaagggg	atcagagaca	29880
cacattaaag	aggtaggatc	cctaggactg	gaggggttgc	tgggtgcggg	gagtgaggga	29940
aaggaggagt	taatgatgat	actcaggttt	ctgggcccggg	caactgagtg	agaggacccc	30000
cgaggaaggt	tttaatatg	agcacaaggt	tgattcttta	tggccgtgoc	aggccttcaa	30060
gcctgggtgg	atgcagaatg	gagtggggtg	tttggtttgc	tttgctcact	cacctgtggg	30120
tgaggagtgc	tgggctgcta	ccccttggct	atattctctg	acctgtcatc	ttaacattag	30180
gacaattgct	cctcaataat	tggtaaaggga	ccagccatgg	tggctcacac	tataattcca	30240
gcactttagg	aggccgaggc	aggaggattg	cttaaggcca	gaagttcggg	accagcctgg	30300
gcaacaggat	atagctatac	cctgtctcta	cggaaaaaaa	aaaaaaatag	ctggtgtttg	30360
tgggtgacac	ttgtagtctt	agataccag	gaggtcagg	catgaggatg	gcttgagccc	30420
gggaggtcaa	ggctacagtg	agctatgac	acaccactgt	actccagcct	gggcaacaga	30480
ataagactct	gtctctattt	aaacaacaac	aaaaaaaaaa	atttggtaaag	acctcacttt	30540
ttattttatt	ttttttattt	cccgcaaaga	cccttgaagt	cgctaccaat	gtcatttgct	30600
acctttggag	tgcactcttt	tgatactggt	ggttttaattg	acaaaggcca	gaacgggaaa	30660
gagacagaca	tgggaagggt	cgagtcagac	ttggcttcag	agccagaaa	atgggttttg	30720
aacactagct	gggtaagctt	aggcauacct	aatttctctca	cctgtaaaa	atggaaaaata	30780
acaccacccc	caaaggcctt	atgtgataat	tataatgagg	taaagtattt	atgactccta	30840
cagatgggtga	atgcccagta	aatattagtt	tctgccccct	cctggcccca	ccatagacgc	30900
ttgcggcctg	agccccactg	tctgctaact	aataaaacat	gagcttggtc	tttaccatct	30960
tgatctccct	gttgcttttt	tgtgtaggtt	tttgttttat	ttaatctttc	ggacaatgag	31020
agaagggaag	agaaaagaga	aaggagagag	aggagggaca	cggaatgata	caaaactcaat	31080
ttagaacttt	cctaagtgaa	aatgttgcct	gaaagagtac	cttcaggtgt	cctgcctcag	31140

FIG. 6H

15/131

ttcttttctcc	aagagaaata	ttaacctatg	tgacaataat	atgtgtctac	agtagcacat	31200
ttaagactaa	gaatacctcg	aggcaggcag	atcacttgag	atcaggagtt	caagaccagc	31260
ctggccaata	tgggtgaaacc	ccgtttctac	taaaaataca	aaaattagct	gggcgtgggtg	31320
gcacacacct	gtagtcccag	atactcagga	ggctgaggca	ggagaatcgc	ttgaacctgg	31380
gaggcggagg	ttgtggtgag	ccaagaggca	ccactgcact	ggtgacagag	caagactcca	31440
tttcaaaaaga	aaaaaaaaaag	aaagacttaa	gaatacctac	atggagctgg	catatcaggc	31500
taatgagtaa	gacagaagct	tcctggcctt	ccaagactgc	gtccttttttc	ccttgagcac	31560
cagccttgga	taactagggt	ctgacagagg	cacgcttcaa	gagtggagcc	tcagtagagg	31620
tttactgttt	tcacatgat	ggcagatgtg	ttgtgtccca	tccactgatt	ttgccccacc	31680
gggggagcca	gtcttcatcc	ttgaatctta	tagtcctaag	gtatgatggg	attggcatct	31740
caatttagaa	aaatgccagg	cctccgcctt	gggtcctgtc	caaactctttc	agcttttgga	31800
gatacgcatt	ctttcttatt	actccttctg	gacatagata	agatctaacc	cttcatttag	31860
cgttttagcg	ttagtgcctg	caatctccct	caggccacct	ttcttagatg	ttgggtagct	31920
tcggaatggt	ttggcattgg	cttccgctct	ccagccttca	ctcttccctt	ctttggcatt	31980
ctctttttct	gttgctgtag	cagatcttct	tctaactctca	tctgtgtgtt	ttttttttct	32040
ccatcaaaaa	atccctctga	aaaagatcga	aagttcagtt	ctagccactg	aagaatgtat	32100
agatacatga	aagtgttttt	ttgagtcttc	taattgtctt	taacaaacat	acagtacttg	32160
aaaacaactt	gttatcatat	aatacttagg	tcaggacata	gtttctacct	gcaagtttac	32220
atttatttct	taaggttaagg	ttaaagaaaa	aaaaacacac	acaagaggaa	aaagattcaa	32280
gagactaata	ttacacctct	ttaaaaggca	gagcaggaaa	ccataggggag	agtctcaca	32340
aaatccattc	ttctgcttgg	gatgagatta	ttgatttctt	tagttactac	ttttccctga	32400
agtgttgaaa	taagtgcctt	ttgatgcttg	gacttgagaa	aaacttggtc	cccaaagcca	32460
tttggcacgt	ataaatccca	ggaactagggt	actttaggca	ctgtgtttgc	caagcatgag	32520
agagaagggc	ggggagggga	ggagacagaa	aaaggagcga	gggaaggagg	gaaagtggct	32580
gtactagggt	ccagaggaac	catagcactg	cgtgagagcg	accgacatag	aaggggagcag	32640
gtcctcaactg	aggcctggct	ctccttctct	gagttctacc	agcttcaccc	agggcattcta	32700
catcacccac	actgctcctg	tgaactggg	ctaatttcat	gcaaactctaa	ataggtttca	32760
tccaaatgta	aaacctacag	ctgagtgcag	tgggtctcctg	tagttccagc	tattcaggag	32820
cctgaggcag	gaggatccct	tgagcctggg	caacatagtg	agaccccatc	tctaaaatta	32880
aaataaacia	acaaatatat	atgtaaggaa	aacctagact	gaattcattg	aatttagtga	32940
atacacattt	tgttgtcaaa	gtgaatatct	tacacatctc	taaaattaaa	ataaatgaac	33000
aaatatataa	ataaatgaaa	cgtagactga	attcattgaa	tttaacgaat	acatattttg	33060
gtgtcaaagt	aaatattcca	cacaaggcaa	tacattttga	aggagtttat	gaacttctat	33120
gatttctggt	tatatgtaga	aaatcacatg	ctttaacttc	cgaaagcatc	tttattgtca	33180
cacagtaaat	atttaaaagg	agagattggg	tttttagcagc	agaggagggg	gaaggacatt	33240
acaggccaga	gaaacagtgt	gaccagaatc	ttgaagggtg	gaaagtacaa	ggtccagttt	33300
gattagaaat	caggagggca	gcaggaggga	aagcaagaga	gaaactgcc	gattaggggag	33360
ggccctgagg	gccagaagag	gattttgtag	ttaatttgga	agaaaacatt	gtaattaaat	33420
aaaaagtttt	taaagcagtg	gagctgtatg	cattaggaaa	attataataa	catccaacat	33480
ctgttgatca	tttacagtgt	tctaagcgat	ttacactgta	ggctgagctc	tttaggtata	33540
tgagctcatt	gaaactcaca	acactcttgc	aaaggtgata	tcatcatttt	atggaagcag	33600
cftagggtcca	gagaggttca	ttcactttgc	ccaaggtgac	acagctagta	agcaccagga	33660
ccaggatttt	aaacttagag	gtgtccggtt	ccaaagcctc	cattcttaac	cacaaaataa	33720
taaatgccag	aacaaaagaa	gtgaaaaaaa	gaattcaaaa	actcttgtga	cttaaatgtt	33780
actgaagtgg	gtgtgagggg	agaggagaaa	ggggagtcac	aaacaactgc	tagaatttga	33840
gccagtgtgg	gaattctgca	ggtagtga	tcggaaagag	gtaagggtta	gagggcaaac	33900
tggagagctt	gcaaaactgg	tgagtgggtg	ataataggag	ctgaagtcca	ggatcacagc	33960
tggggctgga	atggaaatca	agggtcattt	acataatgac	agtgtttaaa	acgcctctaa	34020
gaagagtggg	tcactgaggt	cttaaaagaga	gcagaagaga	agcaaagatt	cggactaagg	34080
tccaaattac	agggaagaa	tgaatagcta	ttagagaaga	cacatcaata	gtgacaagag	34140
gtaaaagtgt	agagctatga	taaatgtgca	tatttatctt	tacagggaat	atttccccat	34200
agggaacagt	ttctagagta	atgctgaatt	tgtaaaatta	tctgaatctt	tgagtcctct	34260
agtagcacat	ttcttctctt	agaaattggg	atttggccca	gctattttggg	aggctgaggc	34320
acgagaatcg	cttgaaccog	ggaggcagag	gttgagatga	gctgagatcg	cgccactgca	34380
ctccagccta	ggtgacagag	ggagactctg	tctcaaaaaa	aaaaaaaag	aaaagaaaag	34440
aaaagaaaaa	agaaattggg	atttgggggc	tgggcaccgt	gtggctcatg	cctataatcc	34500
cagcactttg	ggaggctgag	gtgggaagat	cacttgagcc	caagagtttg	aggctgcagt	34560
gagctatgat	tgtgccaatg	cactccagcc	tggccaacag	agcaagaacc	tgtctcaaaa	34620
aagaaaagaa	aaagaaagca	aagattatct	tccatcagaa	ataaatatga	ttaacattta	34680
ttagtatatt	ctttcagctc	tttctggatt	catacatact	cttttttcaa	caggacatct	34740
tctgaaaata	gttttttctca	caagatatgt	tgtatatattt	tgcaaggcat	tcagtttagt	34800
attcataaga	atttgatagt	gttataatga	taataatgca	tcataaaggc	agattaaaaat	34860
gcatttagcc	aaacctctca	ttggacatct	aggttggttc	cacattataa	ataatgctgc	34920
aattcataat	tttttttaatt	aaaaataatt	cttttttagag	acagggtctc	actctgtccc	34980
caggctggag	tgtgtctatt	cacagggtaca	atgacagctc	actgcagcct	tgaactcccg	35040

FIG. 6I

ggcccaagtg	atcctcctgc	cttggcctcc	caaagtactg	ggaatacagg	agtgagccac	35100
catgcctggc	cactttttac	ttatttctga	atatttcccta	gaagcaaaat	cactgggtcaa	35160
atgccatgag	tgtgttcaat	gcagagttca	tttctgaaca	tgactatcaa	tttgctggta	35220
gtacttatgt	tagactgtag	tgaaccatgc	tatctctttc	ctacttcctc	atttccattc	35280
ttgtaagtca	aaaggaaacc	ttacaacaag	gatcaacagc	aacctttcag	aaaaagcata	35340
cacgtttttt	gttgttgatt	ttttttttct	ttaacacctt	caggatatggg	ttagcagtc	35400
ccctctgttt	acccttacaa	accgctttgg	gcactcagtg	ttttttaaac	aaagaggcct	35460
ggtaaccttg	atggtaaggc	tgtctgtccc	aaccgggtcca	gctcctcact	ggcagaggga	35520
cttctgcatt	tccagcctgt	gatttttagtt	agaggcacaat	ccaagggtggg	gagcctcact	35580
cagggtgagga	agatatttgt	caggctctgct	aggattttctc	tcccaggcctt	cagaaatttg	35640
caagcatcct	tgcattttcct	ggcattctctc	ggcctggaat	gctgtttttt	gtccttgggccc	35700
tccctggcag	agcaaggcag	tcccccttttc	tgtcttcaga	gcctttctctc	gggcttggga	35760
caggcccaact	gtgttggcac	aagcttccatt	tggtctgctg	gggagccttg	ctgcaggctc	35820
tgggtgctcg	gcatctcccc	tggctgtctcc	tttctgtcct	attcaatcag	cctcagcacc	35880
tgcacttgctc	agttaggcct	gatgttacctc	tggatgggaa	atggaacttc	tttactgttg	35940
ctctaattcc	atgttttcaca	aaccgcaggg	cctatggatg	gattgggaag	taaattttaaa	36000
atgtgaagga	aaaaaaaaatc	ggagtccatc	gcaacaatgg	taggtattgt	ttcatttaaac	36060
ttttttcaga	ttttatatat	gcaaaactgta	agggtccctat	tcaaagacct	tgaagccaa	36120
gaatgtgaac	tgtgcatttc	aaacgtatgt	cagtattcct	atggggctgt	gatgcataatt	36180
taggtgggga	aatgtgatac	cgttttttatt	ttattagcta	ggctaataac	cgcaagatca	36240
tatggcttta	gtggagaaaa	cacaaggctt	tggactcaga	actgggtcaa	tattgttgct	36300
aactagctgt	gtgaccttgg	acaattcaac	gaatctctct	gagcctccct	tagtattgcc	36360
tgtaaaagac	agataagcat	cctggcctta	taggattact	gttaggatta	aacaaaaatct	36420
tttttttttt	tttttgagac	agaatctcgc	tcttttgccc	aggctggagc	acagtgggat	36480
gatcttggct	ctctctaac	ttcgcctcct	gggttcaagt	gattctcgtg	cctcaacctc	36540
cctagtatct	gggatcacag	gcacacgcca	ccacactcag	ctaatacttt	tgtactttta	36600
gtagagctgg	ggttttgcca	tgttggccag	gctggctctg	aactcctggg	ctcaagtgat	36660
ccaccacact	ctgcctccca	aaatgctggg	attacaagcg	tgagccatca	caccagccat	36720
aaacaaaata	ctctatgtat	agtgccttagc	acatgggaga	cacatgctaa	ataaagcctt	36780
ttgtctagtc	ttttgtctgg	gccataagac	atcctctctt	ggcagcacag	ccactctctt	36840
cctcatctca	agagtacatg	ctggctgggc	gcgatggctc	aggcctgtaa	tcccagcact	36900
ttgggaggct	gaggtgggca	gaacacttga	ggtcaggagt	tgcagaccag	tctggccaac	36960
atggtgaaac	cccactctcta	ctgaaaatac	aaaaaattag	ctgagtgtgg	tggcttgccg	37020
ctgtaatccc	actactcggg	aggctgagct	tgagcctgag	aggctgaggt	cgcaatgagg	37080
ctgcactcca	gctctgggcaa	aagagtaaga	ctctgtctca	aaataaaaaa	actgagagag	37140
agtagatgct	acctgtgtct	caaaaaaaa	aaaaaataaa	aagtacatgc	cacctgcgat	37200
atcacacag	ttctgtttct	cagtttccca	ctctatgggt	tgtatgatga	caataagtgt	37260
ttcctataaa	aagaatctct	gatcaagaaa	atttcagaat	tacagtttac	aatcatatga	37320
aatgcttagg	ccccaaactca	aatgtctgca	ggggccaggg	agggtatatg	attgggtgaa	37380
aagtcaggct	aaccacttag	ggaatggcgg	ggactgtggt	aaacttgaga	accctgacct	37440
ctttgaggga	ggcagttact	cttcattcca	accatcctcc	ccatgtggaa	atgtgaaccc	37500
aacctttatca	gatctctcac	ttttcaaaaag	aagccaaata	tctggatttt	ttattgtgaa	37560
gatttctact	gttttctggg	ttttgtttgt	ttgttttagag	acagggtctc	tctctgttgc	37620
ccaggctgga	tggagtgtga	tggcaggatc	atagctcact	gcagcctcaa	actcccgggc	37680
tcaaaacaatc	ctcctatctc	agccttctga	gtgagttagt	ggaactacag	gtgagcgcca	37740
ccaccacacc	cagggaaattt	tttttttttt	tttttagaga	tggctcctaaa	ccgggcacat	37800
tggctcacac	tgtaatccc	agcactttgg	gaggctgaga	caggcagatc	acttgagccc	37860
aggagttaa	gaccagccca	ggcaacatgg	agagaccccc	atctctacaa	aaaatacaaa	37920
aacataatta	accaggcatg	atggtgtgca	cctgtagtcc	cagctacttg	gggtgggggtg	37980
aagggagggg	agagggtgga	ggagactgca	gtgagccgag	gtcacgccac	tgcactccag	38040
cctaggtgag	accctatctc	aaaaaaaaaa	aaaaagagag	agagagagac	agtgagctga	38100
agtgcacatca	ctgcactcca	gcctaggcga	gaccctgtct	caaaaaaaa	aaaaaaaaaa	38160
aagagagaga	gagagagaga	gacagtgagc	caagggttgca	ccactgcact	ccagcctagg	38220
cgacagagcg	agactgtctc	aaaaaaaaaa	aaaaagagag	agagagagag	agagctgagg	38280
tgcacatcact	gcactccagc	ctaagggaga	ccctgtctca	aaaaaaaaaa	aaaaaaaaaa	38340
acaaaaaaag	aaaagaaaaa	aaaaagagaa	agagagttag	ccaagggttg	accattgcac	38400
tccagcctag	gcgaaagagc	aagaccctgt	ctcaaaaaaa	aaaaaacaaa	aaaagagaga	38460
gagagagtgc	caagggtgca	ccattgcatc	ccagcttagg	cgatagagcg	aaacctatct	38520
aaaaaaaaaa	aaaaaaaaaa	aggagagaga	gaccatctcg	ctctgtcgcc	caggctggag	38580
tgcagtgggt	caatcactgc	ttactgcac	cttgaactcc	tcttctgcct	cggcctccca	38640
aagtgtctag	attacaagtg	tgagccacca	tacctgccc	atgtctacct	ttttaaaaca	38700
ccgctttgac	cgaatgaaac	gtctgtgggt	cagataaggc	cagagagggg	ccagttttacg	38760
ctgtcagctc	taacccttca	tggctgggca	tactcattac	ggtcaccccc	ggctctccag	38820
aaaagcctcc	cacggtatcc	ctataaaagc	gcttggttta	aattactata	atatttttgca	38880
gcaaaaaatat	actttaagca	cagaatatgt	aactccaata	atagatgaaa	attctaccta	38940

FIG. 6J

atgaagagga	ccatcttttt	cacaaggtgt	taaacacat	gaacagcagg	aaagaaatag	39000
gcaaagttgg	cgagggagt	ttccattgtt	cctgtcttta	gttaacccaaa	accactcgta	39060
agacatttat	tgctttttta	aaaatagctt	tatcaaaaata	tgattcatac	accatgtaat	39120
ttaccactt	acagtgtaca	attcaatggg	tttgggcata	tttaccaggt	catgctgcca	39180
ttactataat	ctaactctgca	acatttttgt	acccttaaaa	gaaactccat	accatttagc	39240
aggcactctc	tttttcccca	aaccctggaa	gccactaatc	tacttccctg	tctataatat	39300
ttcctgttct	ggatatttta	tataaatgga	atcatacaat	atgtggcctt	cttatgtctg	39360
ggctctttca	cttagcataa	tgtcaaatat	atatgtatgt	gtatggatat	accacattcg	39420
atztatccac	tcacagttg	atgggcattt	gggtgttttc	cactttttga	ctgttacaaa	39480
tgctgctgct	atgaagattc	atgtacaagt	gtgtgtggac	atgtttttgt	ttcttttggg	39540
tatatacct	ggagtggaa	tgctgggtca	actgctatct	atctgtgttt	aaccttttga	39600
ggaactgtca	gcttgttttc	caaaacacct	gcccgtttac	atttccacaa	gtgtgcataa	39660
gggttccagt	ttctttctcc	acatgctcac	ccatgcttgc	tactgtctat	ctccttgatt	39720
atagccatct	gcgtgggtgt	gtgataagca	tttattctga	aggtgtaagg	cagttttaat	39780
agagcagctg	aatttgatgt	ttgatgtgat	tattgagatc	aagacctaat	atagggatct	39840
tttctgaact	tagatcacct	ttctgtgaaga	acttttacta	ttgcgttttc	cactcgtcat	39900
gtgtaccatt	ctttgactaa	ccagaggaca	ggcctcttaa	ggaaaggtct	gatattttcc	39960
ccttactaac	cagtaaaatc	atccaattct	atagacacta	ttgatataaa	ttagctttgg	40020
tacaattttc	tgtgccatag	cattgatggc	agatacfaat	gctgcccacg	gagaagctgc	40080
tgattttccc	ccggaaaact	cggtgctgag	caggaggtac	ttaagcagct	ggggaagagg	40140
ttctccttct	ccatacatga	acacatatag	caccatctcc	ctctctttcg	cctctggtct	40200
ttcttcttgc	ctctccattt	agtcataaaa	catcctttca	agttagacta	aggtagtgc	40260
agccctaagg	aaatgttgag	gaaactgagc	atagacctcg	gtgactatga	gaggtccgtg	40320
catagtgaat	tgaggggatt	ggatgtcagt	atccttgcct	ctagtctgga	gttcacaaaa	40380
ctgtgctctc	ttcttttcc	aaatgcctca	ttcctttatt	ttcactgccc	taaaaaaaaa	40440
aaaaaaagtt	ttcagtatgt	gtgatcctta	gtatggttgt	atggttatat	ggttgacctc	40500
atcagacatt	ttgggttagc	gtttcctctc	cttttccgaa	actggcctgt	tttgcaaagc	40560
agacaagaga	attcatatag	cttgacttta	ggactcattg	cattgggaga	gatcaatatt	40620
ttcaaccaat	gaaaaactta	cagctcccag	tctgtcattt	tgttgtttgt	gttgttttct	40680
gtattgtttt	gttttgtttt	gaaatggagt	ctttctctgt	agcccaggct	ggagctcagt	40740
ggcaccatct	cagctcactg	caacctctgt	ctcccagggt	caagcgattc	tcatgcctca	40800
gcctccggag	tagctgggag	tacaggtgtg	cgccaccatg	cctggctaag	ttttgtattt	40860
ttagtagaga	tgcggtttca	acatgttggc	caggctggct	tcaaaacccc	tgaccttaag	40920
ttatccgcct	gcctcggcct	cccaaagtgc	tgggattacc	agtgtgagcc	actgtgcctg	40980
gccttgcatg	tcgtattttt	tttacgtcag	agttttttat	ttgtatcttt	gttttgagac	41040
agagtctcac	tctgtggcac	tctgtgttag	tctccattca	ctgcaacttc	cgccccctgg	41100
gttcaagtga	ttctcgtgct	tcagcctccc	aggtagctgg	gactacaggc	atgcgccatc	41160
acacccggac	tcatttttgg	cttttttagta	gagacagggt	tttgccgtgt	tggccaggct	41220
ggtcttgaac	tcctggcctc	aagtgatcca	cccacttctg	cctcccaaag	tagtgggatt	41280
acaggcataa	gccaccacac	ctggctcacct	tttaagtttt	aaaagcccat	tgggtggccag	41340
ccgcggtggc	tcacgcctgt	aatcccagca	ctctgggagg	ccttaggcgg	gcggatcacc	41400
tgaggtcagg	agttcaagac	cagcctggcc	atggtgaaac	cccactctcta	ctaaaattac	41460
aaaaaattag	ccaggcgtgg	tgggtgcgtgc	ctgtaatccc	agctactctg	gaggctgagg	41520
caggagaatc	gcttgaaccc	gggaggtgga	cgttgcagtg	agccgagatg	gtgccactgc	41580
actccagcct	gggcaacaag	agtgaactc	catctcaaaa	aaaaaaaaaa	aaaaaaaaaa	41640
aaaaaaaggc	cgggcacggt	ggctcatgcc	tgtaattccc	gcactttggg	aggcggaggc	41700
gggtggatca	cctgatgtta	ggagttcgag	accagcctgg	ctaacatggt	gaaatcccgt	41760
ctctactaaa	aatacaaaaa	aaaaaaatta	gccaggtgtg	gtggcccatg	cctataatct	41820
ctgctacttg	ggaggctgag	gcaggagaat	cacttgaacc	tgggagacag	aggttgcagt	41880
gagccgagat	cgcgccactg	cactccagca	taggcaacaa	gagtgaacc	ccgtctcaaa	41940
aacaaaaaac	aaaaaacaaa	aaaacaaaaa	aaccaaccat	tggtttgggt	gaacatggga	42000
gacaaacatt	aaattaaaga	taaaataaaa	taggccaggc	gcgctggctc	acacctgtaa	42060
ttccagcact	ttgggaggcc	aaggcagggt	gatcacgagg	tcaggagtgc	aagaccggcc	42120
tgtccaatat	aatgaaaccc	tgtctctact	aaaaatacaa	aaattagcca	tggcgcgctg	42180
ctgtagtccc	agctactcag	gagtctgagg	cagaagaact	gcttgaacct	gggaggtgga	42240
ggtcgcagtg	agctgagacc	acaccactgc	actccaacct	gggcaataga	gcaagcctct	42300
gtctcaaaaa	attaattaat	taattaaata	taaaataaaa	aataaataaa	taagtctggg	42360
catgggtgct	cacaccgtga	atcccagcac	tttgggaagg	tgaggcgggt	ggatcaccta	42420
aggctcaggg	ttcaagacca	gcctggccaa	catgtgaaa	ccccgtctct	actaaaaata	42480
caaaaattag	ttgggcatgg	tggcacacgc	ctgtgatcct	agctacttgg	gaggctgagg	42540
caggagaatc	acttgaaccc	aggaggcaga	gggtgcagtg	agccaagatc	gcgccaccgc	42600
cctccaacct	ggacgactga	gtgagactcc	gtctcaaaaa	aaaaataaaa	taaaacaata	42660
aaaagccaat	tggtaacaat	ctttgggcag	acaactctgc	agttttctgt	gataaagtct	42720
aatttggctt	gccatagtcc	actgtatcca	ccaaggataa	atcttggcct	aattggaaac	42780
tggtaaatgc	ttagactata	tgtgtttctc	tacatttgag	atcccccttc	accctccaac	42840

FIG. 6K

tgtgcctctc	cctttttaag	ttacgtcaat	gagatgtaat	tggcacctat	cctcaatctt	42900
agtatcctaa	cattcgcttc	ttattctatt	ttcctgcctt	ttgatttaga	aagacctaaa	42960
tgctttttaga	tctaaagata	gaagaggaag	gttaaaacaa	taatttgcaa	tacgtactcc	43020
ttcagctatt	aattcattta	tgcaacgggc	tttattttaat	gcctgctgta	tgccaagtac	43080
tctgctaggt	gcttgggatt	caaagatagg	ggctgggctc	agtttctcat	gcctgtaatc	43140
ccaacatttt	gggaggccaa	ggagtttgag	accagcctga	gcaacatgga	gagaccctgc	43200
ctctacaaaa	aaaaaaatag	ccagcaccag	gcacgggtgg	tcattgcctgt	catcccagca	43260
ctttggggagg	ccaaggtagg	aggatcactt	gagcccatga	gtttgagacc	agcctgggca	43320
acatggagag	accttgtctc	tacaaaaaat	aaaaataaaa	ataaattagc	tggggctggg	43380
cacagtggct	catgcctgta	atcccagcac	tttgggaggc	caaggcgggc	ggatcacaag	43440
gtcaagagat	ggagaccatc	ctggccaaca	tggtgaaacc	ccgtctccac	taaaaataca	43500
aaaataagct	gggcgtgggtg	gcacgcgcct	gtagtcacag	ctgttcggga	ggctgaggga	43560
ggggaatcac	ttaaaccaag	gacgcagagg	ttgcagtgtg	ccaagattgt	gccactgcac	43620
tccagcctgg	tgacagaggg	agactccgtc	tcaaatataat	aaataaatag	gccgggctgtg	43680
gtggcactca	cctgtagtcc	tggcttccca	ggaagctgag	gtgggaggat	ggcttcagtc	43740
ccagaaagtc	aaggctgcag	tgagccgtga	tcattgccact	gcactgcact	ccagcctggg	43800
caatacagcc	ataacctgtc	ttagaaaaaa	aaaaacaaaa	aatacagagt	tcttgccttt	43860
aagggtgtaca	gtgcagtggg	acaagcagat	acaactggag	aaccacaatt	gtgattgcag	43920
taattaatat	acacaatat	acaggattac	agaaaaagag	tacgtccctt	atcctagagg	43980
ggatggagga	agggcataaa	gtacattaat	gacgatctgt	aattcagttg	tttaaatgta	44040
gcatgggaga	gggtgttcag	gcctcttcga	ctggatgact	ttgtaatttg	ggataaaaca	44100
cccaataact	tggccgggta	ccagggtctca	tgctgttaat	ccttagcactt	tgggaggctg	44160
aggcggggcag	atcacttgag	gtcaggaggt	caagaccagc	ctgaccaaca	tggtgaaacc	44220
gtctctatca	aaaattcaaa	attaccagg	catgggtggg	catgocctgta	gtcccagcta	44280
ctcgggaggg	tgaggcacga	gaattgcttg	aaccggggag	gtggagggtg	cagtgcagctg	44340
agatcgtgcc	attccactcc	agcctgggca	acagagcaag	accctgtctc	ataaaaacaa	44400
aaacaacaac	aacaaaaacc	caataactgt	aaagtaaaat	atgtcaactt	gtgactaagg	44460
attcatgtgg	aagaagaaaa	gcgtctaata	tcataaagga	acatcaagat	tgtgggggtta	44520
gagctagaag	atgtttggtt	tatttttaaaa	tttctgtctt	ttttatgttc	ttccctgcct	44580
atatacacaga	aaatcaata	taagaaatga	attgcctgca	agtgggtggt	tttaaaactc	44640
tctctctgat	atagtctctg	ttaaacttgg	gaataaataa	aggtaccatc	accagactag	44700
gggaagatta	gcattgtttg	aggttaggat	ttaaaaaaaa	caaaacaagg	ccgggtgcag	44760
tggctcatgc	ctgtaatccc	agcacttttg	gaggccaagg	tgggaggatc	acctgagggtc	44820
aagagttcaa	gaccagcctg	accaacatgg	tgaacccccg	tctctactaa	aaataaaaaa	44880
ttagccgggc	atgggtgggc	atgcctgtat	tcccagctac	tcgggagggt	gaggcagaag	44940
aatcgattga	accaggaggt	gtagggtgca	gtgagccgag	attgcaccgc	tgcactccag	45000
cctgggcagt	aagagcaaaa	ctctgtctca	aacaacaaca	ataacaacaa	caacaaaaaa	45060
ttcactagat	ttgcaatcac	tgccctcata	taagattaaa	atatgaagaa	aaactcaagg	45120
ttaactgcac	ttgagggttt	ctaaattatg	ggattgaagg	ggtctatata	atttttaaca	45180
ttaaaaaaag	tttaattctt	acaaccctgt	ggtcccctcc	atttttatagc	tgagagaatt	45240
gaagcatgga	ggtttaaaaa	catgcccagg	atcatacagc	tagtaagtag	cagagctggg	45300
atttgcaccc	aagtctattc	aattccagt	cctattactc	accatatcat	ccgtgtcaaaa	45360
tagaaacctt	gtgtggggcc	attgctctca	agatgtcctg	tggccataaa	tgccaccttg	45420
caggagcaag	ctggtataga	caaccagtaa	agtgtatggc	cgtgccagta	caaagccaac	45480
actgctcctg	gaaaatattg	atagtgccat	attcaactaa	tcgtcaaatt	ttaatatcat	45540
cgatgccact	gaaagtatct	taatcattct	catgaatatt	ttgtaatatg	agacattgag	45600
aagataagac	agtattgaaa	taaatatcta	gattttaaaa	atataaaatt	tgaattgatta	45660
gtagagggaa	gcagaggata	gtaaatatgt	gtgaaaataa	taacataaaa	gttaacttta	45720
gatatattat	ctttaaacac	tgcatgtgca	gtataccaat	ttatatcctc	tttaatatata	45780
tagtcttttt	catgtgcatg	tgtgatata	tgtccattca	ccaagactat	aatccctgag	45840
tccgatagt	tattttcttt	taaaaagaaa	tcaacattaa	aacaggaaag	attatctaag	45900
cttactctca	agtagtttaa	tacatttgag	gaaataaaat	aggttatgga	tgcttataag	45960
cgatataaaa	aatcaaatta	acacgatgta	ggtgatttat	tccaaatttg	atctgtttaca	46020
tttggaggaa	ttggttggtg	gatttagaag	tgtacaaaat	accattagag	agtgaaaaaa	46080
aagggaagtc	tgttataact	gaataggggc	gtggtctgct	caggctaaaa	ggaatagata	46140
gtagtttcat	aaaggactga	tataactgta	gagtcctcag	aactggccac	tacagccagc	46200
acattttctc	tacagacgta	agtatgtcta	ttaataccag	ccagcttggt	gagttagaga	46260
aaccacagcc	tgtggatttg	ggcacatgta	ctctctgcct	gcactctaate	cttcgggttaa	46320
ccatatacct	caactcctg	taactcagta	gcagttacat	ggatgcacta	agtggtgtga	46380
tgggagggaa	agatagcatc	acaaggattc	gtttgattgt	aacagtaate	cacaccaagt	46440
caaataaaat	agccaaacag	tttagaatgt	ggtctctaate	gaatttgcta	attctaccag	46500
ggcctcacaa	acatttcctg	ctagagtacc	ccatatcaaa	ccaagtggct	gttctttaat	46560
tacatggaat	aattatttga	tttccaggaa	gttaagacag	tgctttgtat	ttaaataaaa	46620
agttctagac	atgctgtgaa	actcgatcaa	accaagaaaa	agggtgaaac	tgaatgcctg	46680
ctcactgact	caagatttca	gctgctcagc	gagcctgacg	tgacggctta	tgagcccaga	46740

FIG. 6L

aaaggggtat	tttaaaccgg	gctggctgga	tcatgtcact	ttctttataga	agccctgcct	46800
ttccagagac	ctaaagtgt	acgcaatcag	agacctttga	ggggctcgag	gctcggcggc	46860
ttccgcccc	cagcaccagc	agagacccca	gttttcagg	gacatgatcc	catagtgtcg	46920
ccctcacttt	tgaagggcca	ttaaaagcct	ggggcctctt	atctcaacgg	ctttgggctg	46980
gaatgtgggg	caagaagggg	gggggagacc	tgtgggtgtc	tcttttgcct	gaggagttag	47040
agacacttgt	ggaaaagtca	ggcccttttc	gctccggcgg	ccgctccggt	gtggggctgg	47100
cttgggttag	acacatgcac	acatacacca	tagagctctg	ctttcccgta	gcagctgctg	47160
cctctgcctc	tgctctcccc	gcctcagcct	ctttgcccgg	catacacaca	cattcagatt	47220
tgcgcgctgt	ttcaatcctt	gatgacgtgt	ccccggagac	agccaatagc	aaacgggctc	47280
tggtcaggac	aatgggaggt	atcggggcaa	tgagcgagcc	ccgtgagttg	gcggtagcca	47340
ataggagccg	cgctggctgg	agagtaatgt	tacagagcgg	agagagttag	gaggctgcgt	47400
ctggctcccc	ctctcacagc	cattgcagta	cattgagctc	catagagaca	gcaccggggc	47460
aagttagagc	cggacgggca	ctgggcgact	ctgtgcctcg	ctgaggggtga	gtctggggca	47520
gcgcccgggc	ggggagagcg	cctccggcag	ctccccagcc	cgcgcggcgg	ccggtatccc	47580
gcggccggga	gccggcggtt	caggatccac	acaaaggcaa	atgagggggg	accgtggggg	47640
gaactgcgca	cggagcgagc	ctctgcccgg	gcgcccggaa	cgctgccccg	cgccggtgcc	47700
ccggccctca	ggcagcctga	ggcgccggga	gccccgcgcc	ccgcgagttt	ccacccccgg	47760
cgcgctccgc	gctgactggc	gcaaaaaaaa	aaattttttt	tttaattaaa	aaaattttga	47820
acgtgttttg	ggccctcggt	ccgggcgttc	gggcggcgcg	cgtgcgcgga	gcgcggcgcc	47880
ggcgccgggg	ccggcgcgcc	tcggcgcgcg	ggcggggagg	gcagcgcgcg	cgcttccccg	47940
ggctgcattg	gccgcgcgcg	cagcgagccg	ggcgctggcg	gggagcgcg	ccagccgggc	48000
gggcggcggg	gcgggcgggg	cgccgcggcg	ggcgagggcg	gcgcgggggc	ctggggcgcg	48060
cagtgcgggc	ccggccgggc	tcggcccggt	cgcgcgcgcg	gcggcgcgcg	ggcgcggggg	48120
ggagcggcgc	cgctgcgctc	gctggaacat	ggctgactcg	ggcccgcgcg	tgctggctgg	48180
agagaaaaca	aggcgggcgg	gcggggggagc	tgggcgagc	agttccgagg	caactttttt	48240
tttctctctc	cttttcacag	ccccgcgttc	tcctgtcggg	ggcgcggggg	cgcgcggccc	48300
gcgcggaggg	agacggggag	tgggcgggcg	gtggggccctc	gggcggccccc	caccgcggcg	48360
gggggagggg	agcggcgcg	aggggagggc	ccggcccgcg	gccccccg	cctcccccg	48420
ccgtaattggc	cgagtgtgtg	cgccagagcg	cggctcgac	cccgcccgcc	gcccgcggcg	48480
cgccgcgacc	ctcgcaactca	cacactctct	catacacaca	cacacacaca	cacacacaca	48540
aagggaagga	gccatattct	cgctcgcgct	cgccctcgcg	gcggcgcgcg	cgagggcgga	48600
gaagacgcgc	agcggccatt	ccgtgcgcgc	cggcccccgc	ggccgcgggc	ggagccagcc	48660
cccatttcga	gcggggcttc	tccctgcgc	gagcctgaca	aaatgggggc	ggcgcgggcg	48720
cgggcctgca	gggcctgcgc	ggcgcacgtg	gcggcctcgg	gcctgggagc	cgggcccgct	48780
cctctctcct	cgccgcgcgc	gccacggcg	agtttctagg	ggcggggggc	tcgcccccg	48840
caggagtcac	cccaactttc	acggctccaa	aaaataactt	ccgagttggg	ggaggggggc	48900
accgagccac	gagcaggagt	ggcttttgtc	cctcatcctt	gtttactcgg	agaaacttca	48960
gaccggacgt	gtttagtcag	aacagaaata	catctcaggg	ccaaaccgat	aggaaaacgag	49020
gctgcctcgc	ggtggcaccg	ccacccccca	accgggttcc	gagcaccgga	gctgggtgct	49080
gctccctctt	tggagcaaa	ttttatgcaa	agaggggtgt	ttttgaaact	ttcgggtgcac	49140
ggtagattttt	tttttttaag	gtcccataat	taggaagagt	cgactcgctt	aggcccttgt	49200
ttattcccta	tctagtgcga	agccacgaat	tggcagcatg	ttttctgacc	tttggtttgg	49260
ttgggtttaaa	atgggtgttct	agatttttaa	atcgtttaag	tgaccagtta	gatactcatt	49320
cagagcagac	tcgggcggat	agatagggaa	tactgtatgg	gtatatcttt	gtgtctagac	49380
tttttgagat	cgccctgaag	gactgttttt	gttttggttt	gtttgcttgg	catagccctt	49440
tcaaggaata	taatctctcg	gccatattct	tgtctgattt	tacggaggtt	gatgtcgcta	49500
ctgtgttaaa	taaccagtac	tttggttttc	attcccttac	taagtacttt	aaggtcttat	49560
atgtcataat	tttattgcta	acatcaaata	tttatttttat	tttttagaaa	aataactaaa	49620
catgggcaaa	ggagatccta	agaagccgag	aggcaaaatg	tcatacatatg	cattttttgt	49680
gcaaacttgt	cgggaggagc	ataagaagaa	gcaccagat	gcttcagtca	acttctcaga	49740
gtttttctaag	aagtgtcag	agaggtggaa	ggtaagaggg	cttaaaacat	gctaacaagg	49800
taattaaaag	acagtttcca	attgaggatg	caaaaaaaag	cctagttagc	attctcgtag	49860
tgggagcgta	ttacatagca	aaagacattg	gttttgagga	taatttactt	aaatgtttaca	49920
acttaaaact	acaaataatt	attttgtaga	ccatgtctgc	taaagagaaa	ggaaaatttg	49980
aagatatggc	aaaagcggac	aaggcccgtt	atgaaagaga	aatgaaaacc	tatatccctc	50040
ccaaagggga	gacaaaaaag	aagttcaagg	atcccaatgc	acccaagagg	cctccgtgag	50100
tatcttgctc	gtttttactt	cccagacacg	ttttacagta	gaatctgaga	gaaatttagc	50160
aagctacttt	gtcagtttag	agtgtaaatg	tacaactcaa	gtttcttagc	taatacttgt	50220
tcatattggg	tatatttaaa	tagtataaaa	ttcctgttgg	gtgggagtg	tcccagagca	50280
tttgaattag	acatttggtc	tcctttgccc	agtgtatctc	cttttgatct	ttttatttct	50340
tgaaaaatac	tatccctttg	aaatagtgtg	attgtagaat	gttcatctag	ggttctagct	50400
agtataaaat	aaatagtgtg	aaattaagct	ttggttgtga	aggatattta	gtatattata	50460
gtatttgac	cctgtccaat	gcatacacga	aattcacagg	cagctttaaa	tagcaatgca	50520
gtgtacactt	gatagtattt	gtttttgtga	tctgttaact	taaaatccta	aaattaattt	50580
tttttttagt	tcggccctct	tcctcttctg	ctctgagtat	cggccaaaaa	tcaaaggaga	50640

FIG. 6M

acatcctggc	ctgtccattg	gtgatgttgc	gaagaaactg	ggagagatgt	ggaataacac	50700
tgctgcagat	gacaagcagc	cttatgaaaa	gaaggctgcg	aagctgaagg	aaaaatatga	50760
aaaggtaaga	agtgtgggtt	tgcttggtta	aatgatgaca	agtacgccag	atgtatgatt	50820
gtacttagtt	tgagggtgtaa	taagttttta	gggtaacagc	tacattaagt	atgggtgttg	50880
tataagtcct	catccttcaa	agaatgcaga	ggaccaaata	aattaggggt	tttttgacta	50940
aaatgtaatc	agactcagac	aaaggctgtg	tacattttatg	ttgggttttgt	tattccccag	51000
tatcttgaag	ttcatgaaaa	tgttggtagt	cacttcaagt	caaaaatgag	cattttcaaa	51060
tggcttgga	tacagtacaa	aaacaggcta	gacaaagtaa	tataggctat	atttttctta	51120
gtcatatcct	gaaacattta	tgttcttttc	ctttagatac	tcaaaaaacc	acagcatcac	51180
taagttaaat	tacaagtctg	ctgctctgtc	cagtaaatta	ataagattaa	ggaaatctat	51240
aactcttata	gttcagtaaa	ttgaaatatt	aaatacttaa	ttttcagctt	tagtcattct	51300
gaaaagtgtt	tatttctaga	tgtttcttaa	cctaattgca	tgttttattga	caaattacct	51360
ttttttttta	agaccacatt	tctactaag	gattaagggtc	tgacagtgtg	aacctgtaga	51420
gtgctttttt	gcattcagaa	ggtggcagtg	tctacccttt	aatcaaagtc	tctacattct	51480
ggttttaata	gagttaggat	gtggtacata	attgcacctc	aatgaggcat	aactttgcaa	51540
atattagact	atgccatttc	atgagttata	gattgttata	atgatcttgt	atttttatgt	51600
tcattttattg	aagttctagt	tatttctgga	gttgctgtgg	atctacagat	acgtgatatt	51660
ttggtataac	tagaattctg	atttctttca	taaggttctg	ccatgttcta	tttctttctc	51720
taatgttttt	ttcttcccta	ctgtttttatc	ctccctttgc	tttggaagga	tattgtctga	51780
tatcgagcta	aaggaaagcc	tgatgcagca	aaaaagggag	ttgtcaaggc	tgaaaaaagc	51840
aagaaaaaga	aggaagagga	ggaagatgag	gaagatgaag	aggatgagga	ggaggaggaa	51900
gatgaagaag	atgaagatga	agaagaagat	gatgatgatg	aataagttgg	ttctagcgca	51960
gttttttttt	tcttgtctat	aaagcattta	accccctgt	acacaactca	ctccttttaa	52020
agaaaaaaat	tgaatgttaa	ggctgtgttaa	gatttgtttt	taaactgtac	agtgtctttt	52080
tttgtatagt	taacacacta	ccgaatgtgt	ctttagatag	ccctgtcctg	gtgggtattt	52140
caatagccac	taaccttgcc	tggtacagta	tgggggttgt	aaattggcat	ggaaatttaa	52200
agcaggttct	tgttggtgca	cagcacaaat	tagttatata	tggggatggg	agttttttca	52260
tcttcagttg	tctctgatgc	agcttatacg	aaataattgt	tgttctgtta	actgaatacc	52320
actctgtaat	tgcaaaaaaa	aaaaaaaagt	tcgagctggt	ttggtgacat	tctgaatgct	52380
tctaagtaaa	tacaattttt	tttattagta	ttgttgtcct	tttcataggg	ctgaaatttt	52440
tcttcttgag	gggaagctag	tcttttgctt	ttgccattt	tgaatcacat	gaattattac	52500
agtgtttatc	ctttcatata	gttagcta	aaaaagcttt	tgtctacaca	ccctgcata	52560
cataatgggg	gtaaagttaa	gttgagatag	ttttcatcca	taactgaaca	tccaaaatct	52620
tgatcagtta	agaaatttca	catagcccac	ttacatttac	aaactgaaga	gtaatcaatc	52680
tactcaaagc	atgggattat	tagaatcaaa	cattttgaaa	gtctgtcctt	gaaggactaa	52740
tagaaaagta	tgtttctaacc	tttcatgag	gactctattc	tttaactccc	attaccatgt	52800
aatggcagtt	atatttttgca	gttccacat	taaagaagac	ctgagaatgt	atccccaaaa	52860
gcgtgagctt	aaaatacaag	actgccatat	taaatttttt	gttgacatta	gtctcagtga	52920
agactatgaa	aatgctggct	atagatgtct	tttccattt	atctaaatat	ggactgctca	52980
ggaaacgaga	ctttccatta	caagtatttt	taattaattg	ggccagcttt	tcaaacaaag	53040
atgccacatt	caaaataggg	tatattttoc	tatattcagg	tttgcccctt	ctgaaatttc	53100
agtagatagg	aagaaagaag	acaaaactttg	catctcagta	tgaattattc	aattttatttg	53160
aatgattttt	ctttacaaaa	caaactcatt	cattagtcac	gtttatctgc	ttaggagtgt	53220
agggacaat	ttggcaattt	tgtgggttttc	gagattatcg	ttttcttaaa	gtgccagtat	53280
tttaaaatag	cgttcttgta	atttttacacg	cttttgtgat	ggagtgtctg	tttgtttata	53340
aatttagact	tggattcttt	ccattttgcac	ttgtttatgt	aatttcagga	ggaatactga	53400
acatctgagt	cctggatgat	actaataaac	taataattgc	agagggtttta	aatactagtt	53460
aaatggcttt	cacttaagaa	cttaagattt	tgttacatat	ttttaaatct	tgtttctaat	53520
aatacctctt	agcagtacct	tttaataaag	tataagggat	ggcaaagttt	ttccctttta	53580
aaatactcac	tttatgctta	taaataggtt	aatgggctga	taaaaggttt	tgtcaaacat	53640
tgcaagtatt	cggtgctata	tataaaggag	gaaaaaactag	ttttactttc	agaatgattt	53700
aaacaagatt	tttaaaaaaca	agatacatgc	aagcgacacag	cagggttagt	gataggctgc	53760
aattgtgtcg	aacatcagat	tttttggttaa	gaggagcaaa	tgactcaatc	tgatttagat	53820
ggaagtttct	actgtataga	aatcaccatt	aatcaccaac	attaataatt	ctgatccatt	53880
taaaatgaat	tctggctcaa	ggagaatttg	taacttttagt	aggtacgtca	tgacaactac	53940
cattttttta	agatgttgag	aatgggaaca	gttttttttag	ggtttattct	tgaccacaga	54000
tcttaagaaa	atggacaaaa	cccctcttca	atctgaagat	tagtatgggt	tggtgttcta	54060
acagtatccc	ctagaagtgg	gatgtctaaa	actcaagtaa	atggaaagtg	gaggcaattt	54120
agattaaagt	taaagccttg	taactgaaga	tgattttttt	tagaaaagtgt	atagaaacta	54180
ttttaatgcc	aagatagtta	cagtgtgtgt	gggttttaag	actttgttga	catcaagaaa	54240
agactaaatc	tataattaat	tgggccaact	tttaaaatga	agatgctttt	taaaactaat	54300
gaactaaagat	gtataaatct	tagttttttt	gtatttttaa	gataggcata	tggcatattg	54360
ataacagagt	caaatttctc	aactttgctg	tgcaaaggtt	gagagctatt	gctgattagt	54420
taccacaggt	ctgatgatcg	tccatcaca	gtgtgtttaa	tgtttgctgt	attttaaat	54480
tttcttaaa	tgaaatctga	aaaatgaaat	ttgtgtgtcc	tgtgtaccgg	aggggtaagt	54540

FIG. 6N

attaaatgat	aaagataaga	aaagcgccca	tgtaacacaa	actgccattc	aacaggtatt	54600
tcccttacta	cctaaggaat	tgtaaccatt	gtcagacat	tgtaggattt	aactatgttg	54660
aaaactacag	gagaggccgg	gcgcagtggc	tcacgcctgt	aatcccagca	ctttgggagg	54720
ccaaggcggg	cagatcacga	ggtcaggaga	ttgagaccat	cctgggctaac	gtgggtgaaac	54780
cccgccctcta	ctaaaaatac	aaaaaattag	ccaagcgtgg	tgctggggcgc	ctgtagtccc	54840
agtaactcag	gaggctgagg	caggagaatg	gcgtgaaccc	gggaggcgga	ggttgcagtg	54900
agccgagatt	gtgccactgc	actccagcct	gggtgacaga	gcaagactcc	atctcaaaaa	54960
aaaaaaaaaa	acacaggaga	gacaactggg	ttttgaatga	aatacatggg	tactgccttg	55020
cttgacatca	catagtccct	gatgaaagtt	cacatttagg	tctgcttggt	acaatacgcc	55080
tcctaaaaag	gtccttgatg	aaagttcaca	tttaggtctg	cttggtacaa	cacgcctcct	55140
gaaagggctc	gatagctttc	agtagcagta	agacacttgc	atgtgatggg	aaggatatctg	55200
caaatttgca	cacaccgtac	acagcttaag	tcttagaatt	aacttgctaa	aatgtgagcc	55260
tttggtaatt	aggctgtttt	attagggagt	gtgataatat	ttgaatttct	tttcatattt	55320
gtgctttgtg	tcatttttcaa	atgacccttg	aaatgtattt	taaaagtaga	taaaagccag	55380
aaagtgattt	gattgtctat	ccagcaaaag	atgggtggtc	attttcttgt	cctcttaata	55440
ccaaggcagt	gctaataaca	cttgccacaa	cttgggaaat	tocatgggtc	tatgccacat	55500
tgctcccaga	gtaatgaggc	aaaatagtgc	tctgttatag	aattgcttgt	ttcacgatac	55560
atcatgacag	ataaccatac	aacatggaat	gacacaaaca	taatatgcca	cactccagaa	55620
tatgtaatgc	tcgtcttcca	ggggggttca	gtctaaggta	atctctacca	ggaagaaatg	55680
ctagatgact	ttagacatgt	gcattggttt	ggaccttcta	attagtggaa	tttttactta	55740
ttttgacatg	agagattaca	tagaatctct	atgttgccca	ggttggtctc	caaactctgct	55800
caaacaatcc	tcccgccctca	gtttctcaag	tagctgggat	tacagggaca	caccactgtg	55860
cttagcttaa	atagttgaat	ttattgggca	tccactgaaa	agaaggaagt	aggaataaaa	55920
tctgcaatat	tatgactaaa	cctgtaagt	agcatgagca	gtgggtgggca	agggtatgca	55980
gactctggaa	tccagaaata	gaaagtcagt	ggaaagccag	gcacagtggc	tcacacttat	56040
aatcccagca	ctttgggagg	ccgaggtggg	aggatcactt	gaggccagga	gtttgacact	56100
agcctgggca	acatagtgag	gccttgtcta	ctagaaataa	ataattttgc	agataacta	56160
aataccattt	taaaaataag	tggaaaaggg	attagagaga	tccttgtaaa	ttatgtactc	56220
atattcattg	ttctcttttag	tcacataatt	cagtcatgta	cgtgacattc	cacagtatgg	56280
tgctccataa	tacatatttt	ttcttttttc	gatctcactt	gtatatgatc	cataatattt	56340
ttcatcatte	ccttactgat	ggacatttag	attgtttcct	attttttgct	gtttaacagt	56400
actgcgctga	acatctgtac	atttctctca	ggcatgtgtg	ggtcttcaga	tacctcaaaa	56460
gtagaactgc	tgagtcaaaa	gacatttgca	tttaacattt	tggaagatgt	tgataaattg	56520
cacccacccc	cccccccccc	gccacacaaa	gctgttattt	atgctgtgaa	acattttaac	56580
aatgattttg	caattaatca	agattttttac	tggtttttct	ttggctgtat	aactctattt	56640
ttaaaaacga	gaaattaaaa	tactgaaata	ctgtcatttg	tccagagcta	ctcgaccaga	56700
ataagaaaac	cagagagaaat	caactgaaag	actccttagga	caagccactg	ctttatttaa	56760
actgctaaac	tattttctcaa	actcctggcc	tcaaaactatc	ctccctccct	cctcggcctt	56820
gttgctgaga	ttacaggcgt	gagaaccaca	gttcctggcc	taaaactgcta	aactattttct	56880
ctaaagttac	tgcagtaact	aaataagtaa	tccactgtgt	gaaaaatgagg	aggttctttt	56940
tcattttgat	atactctgtc	ctaaatggaa	gtatgtggta	gtttttttgg	tggtttgttt	57000
tattctgggg	agggctcttt	ctagcagaga	ttctatgtca	atctttacaga	agctgcagcc	57060
aacagttttg	gaaatgcaag	ttgttcaata	aggtgtagca	aaaggagaaa	tgtgtggccc	57120
agatactagc	ctttaggaga	caagtgtttg	gaaaggcaga	atggattctg	aggatttgcc	57180
ttaaattggaa	taaagttcac	cagttccttg	ctggagatga	tactttatgg	caaaggacat	57240
actccaaatg	tgcttataaa	tgaaattgta	tttatatgct	caaagtgaat	ttaagctggc	57300
cgggcgcagt	ggctcacgct	tgtaatccca	gcactttggg	aggctgaggg	gggcggatca	57360
tgaggctcagg	agatttgagac	catcctagct	aatacgggtga	aacccctct	ctactaaaaa	57420
tacaaacaaa	ttttccgggc	gtgggtggcgg	gcgcctgtag	tcccagctac	ttgggaggct	57480
gaggcaggag	aatgggtgtga	acctggtagg	cggagcttgc	agtgagccga	gatcgcgcca	57540
ctgcactcca	gcctgggtga	cagcgagact	ccaactcaaa	aaaaaaaaaa	aaaaaagtga	57600
aattaagctt	agttcccttag	cgttacatag	aatctctcat	tagaggcttt	accgtatttt	57660
gtttgttagc	ttttgctttt	tggggtttttt	tctccttttc	acaggtgttg	actgtaccct	57720
ggttttgttt	attgggtttt	aattagagct	tattttataa	agtgatctga	acataaccaa	57780
gtaagagaat	aaaaaacctt	aaaataaaat	aaggatctgt	tgagtgtgag	agagtgtctc	57840
taaagataaa	gaaaaacaag	atgctcagtt	gccacagcct	caggtgccac	tgtaatccct	57900
ggaagagatg	aagagtaaga	acttggaggc	tactcaaagc	aaagatattg	cagctccccc	57960
acccctacac	cccaagcccc	atttccccag	gccttgctct	gccacctgga	atcagccttg	58020
ctggggcttg	ggcacaggga	atggggctag	gcacacttag	gctcagaagc	agagagcttg	58080
accagagagc	ctgttttccag	ggagggacag	aataaggcat	agcactagt	taaggctcta	58140
gcacattaca	ggcgaagggg	gtctaagggc	taccgtagtc	taatctgtgc	atttttacag	58200
agtagtgagc	agaggcccat	agggattcag	aggcttgctc	aaggacaaat	ggcagtatca	58260
aaacactcta	gcagcaccag	gctcacagta	gggtgcaaaaa	agatgtgagc	tctttccccc	58320
tcccttaagg	acagcaacaa	aaaggctgga	aaacttcctc	attgcccctc	acttccaggc	58380
ctgggttctt	ctgctttggc	tacaattttt	gctatgctag	gatagccagt	acattctgct	58440

FIG. 60

atcactgagg	ttcttctctg	gctttctcct	ttgatttact	tggacagaac	atttctgaac	58500
tgaaccaaac	caaaccaaac	aaaaatactc	ccagtcattgt	agaaagttat	aggctatctg	58560
attctaaagg	gctggtaatc	actaatataa	tagatgctgc	ttaggactgt	agcctgatct	58620
tctggaagta	gaagcaagat	gcaatatgct	acacacgaca	ataacttttg	aaaaatcggt	58680
tgcccttatt	atgaatgaaa	cttacattat	tgaacaaaaa	taaataagaa	aacaaaaacc	58740
tgtaattcta	ccagtcagca	agactattac	catattatgt	gcccttccag	tttctatata	58800
taacatgtaa	tatatataga	tatatagata	tagatagatt	ttaaaaattg	aggtgagact	58860
catataacat	aaaattaacc	tttttttttt	tttttttttt	gagacggagt	ctcgctctgt	58920
caccagggct	ggagtgcagt	ggcgcgatct	cggctcactg	caagttccgc	catccgggtt	58980
cacgccattc	tcctgcctca	gtctcccag	tagctgggac	tacaggtgcc	cgccactgcg	59040
cccagctaata	ttcttgtatt	tttagtagag	acgggggttc	actgtggtct	cgatctcctg	59100
acctcgtgat	ccgcctgcct	cggccttcca	aagtgcctgg	attacaagcc	tgagccatcg	59160
ctcccagccc	attcattcgt	ttttaaggct	gaataatatt	ctattgtgtg	tatataccat	59220
aattccttat	tcattcatcc	agtgataagg	tcttaggctg	tttccacott	gtggctattg	59280
tgaataatgc	tgctatgaat	gtgcgtgtac	atgtatttgt	ttgagttctt	gttttcaata	59340
ctttgggtat	atatctagga	gtggaattgt	cgggtcatat	ggtaatttta	tgtctagctt	59400
tttaaggaac	tgccaaactg	ttctccacag	cagctgcacc	acttcacatt	cccaccaatg	59460
atgtatgagg	gtttcaattt	ctctacaacc	ttgccagcac	ttcctatttt	ctatttttta	59520
aaattatagc	catcctagta	gggtgtgaagt	ggaatcgcat	tgtgatttga	tttgtgtctc	59580
cctaatagact	gatgatactg	agtgtctttt	catgtgttta	ttggccattt	gtatgctttg	59640
gagaactaat	tcaagttctt	caccocatatt	taaattgagt	tgtctttttg	tagtgttgtg	59700
tgcataataga	tatacatata	tatatatgtt	ttaaaaaatg	ttataaattt	aaaaatactg	59760
caattgttag	ctgctttttc	tacttccacag	tctatcttga	acaaaagtct	atgtcagctg	59820
ggcacagtgg	cacacaccta	taatcccagt	actttgggag	gccaaaggcag	gcgcactcact	59880
tcaggccagg	agtttgagac	cagcctggcc	aacatgtgtga	aagcttgtct	ttactataaa	59940
tacaaaaatt	agccaggtat	ggtggcatgc	gcctatagtg	ccagctactc	aggtgactga	60000
agcacaagaa	tcgcttgaac	ctgggaggcg	gaggttgtag	tgaactgaga	tggtgccact	60060
acacttcagc	gtgggcaaca	gagttagatc	ctgtctttaa	aaaaatttaa	aaagtcggcc	60120
ggatgcgggt	gctcacacct	gtaatcccag	cactttggga	ggctgaagcg	ggtggatcac	60180
ctgaggctcag	gagttcgaga	ccagcctggc	caacatggtg	aaaccccgct	tctactaaaa	60240
tacaaaaata	aactgggcat	ggtgggtgggt	gcttgtaatc	ccagctactt	gggagcctga	60300
ggcaggagaa	ttgcttgaac	ccaggagtcg	gaggttgctg	tgagccgagg	tcgcaccatt	60360
gcactctagt	ctgggcaaca	agagtaaaac	tccatctcaa	aataaataaa	taaataaata	60420
taaatattaa	aaaagtctat	gtcatcatat	attcttattc	tgctgggcat	tatttttaagt	60480
gcttgaatgt	aaaattacct	aaattattca	atcaattcca	tattattaga	catttagttt	60540
atgatttttt	actgtttacat	ataagggttaa	catgactatc	ctttctttat	gtccacacct	60600
ttgcccataa	ttattttctt	aggatataaa	tatatctctc	aaagggaat	cactgaatca	60660
aaagatgagc	caaatttggt	gaattttacc	aagctacctt	tggaaagttt	tcacccaaat	60720
gtaacaactt	tttaaaaggc	tattcagaca	atttttacata	gaagggtatc	aaaatagggg	60780
catggtttct	aagattttat	aaaggttcaa	gcctacaaca	gtggggggaa	tcgtgaaagg	60840
agtaaacctt	caaaagcaag	cagataaaaa	ccttgaaaaa	cttggaatac	cattggattg	60900
aaatgtccat	tcctctttat	acttctgtta	ccttactact	tttcagggtg	gagattaaaca	60960
gaaagagctt	ttatattcaa	gtaattgcag	aactgcaaaa	agtgaatgcc	tagatcaatt	61020
ggaattggta	gaaaaactga	aaattttgca	cgagcattag	agcttttttg	ctttttactt	61080
cattgtgtca	ctgtactttg	taaaaaacct	cataatctcc	aaaattttact	aattagtaac	61140
tgtatcagat	ttttttctt	taaaataagg	taaaataaca	catttttaca	tactgtttta	61200
aaaccaagac	gtagatcaac	attctttcag	gcattttaaca	gtggccaata	ggccaacctg	61260
aaactgaatt	aattatgtat	aattttatct	ctagacaatc	ccataggaat	ctttttcata	61320
cattgatgag	taatggattt	taccctacat	aggctactga	aaagcagtg	aaatttcatt	61380
gcttttttgt	gtttgtttgt	tttttttctg	agatggagtc	ttgctctgtc	gccaggctg	61440
gagtgcagtg	gcacaatctc	agctcaccgc	aacctccgcc	tcctagggtc	aagcgattct	61500
cctgtctcag	cctcctgagt	agctgggatt	acaggtgcct	gcaccatttc	tggctaattt	61560
ttgtattttt	tagtagatac	gggttttcac	catgttgcca	ggctagtctc	aacctcctga	61620
cctcaagtga	tcgcgccgcc	tcggcctccc	ggagtgcctg	gattatgggc	gtgagccacc	61680
atgcctggcc	tcattgtttc	tttaagcact	taacttttag	aaggcagcat	tgcaaaactt	61740
cacgtctgaa	tttatatata	ttgagcttct	atagataaatt	acagtgtagc	tttagaaata	61800
atattgattt	tggccaggcg	cagtggctca	cacctgtaat	cccagcactt	ggggaggcca	61860
aggcaggcg	atcacgaggt	caggagatcg	agaccatcct	gccaacatg	gtgaaatccc	61920
cgtctctact	aaaaatataa	aaattagctc	ggcatgggtg	catgcacctg	tagtcccagc	61980
tactcgggag	gcttaggcag	gagaatcgct	tgaacccggg	aggcagaggt	tgcatgagc	62040
caagatcaca	ccactacatt	ccagcctggg	cgaaagagtg	aaactctgtc	tcaaaaaata	62100
ataaataaat	aaataaaaaat	ataaaaacttg	ggagttttta	aaaaaattgt	taaggctcta	62160
aaggttttta	aataactgta	cttaagaatc	aactgaccca	ggccagtcct	tactaaaaaa	62220
tcaaaataat	attgattttg	gcagggcgcg	gtggctcacg	cctgtaatcc	cagcactttg	62280
ggaggccgag	gcaggcgagat	cacttgaggc	caggtgtctg	agaccagcct	ggccaatgtg	62340

FIG. 6P

atgaaaccct	gtctctacta	aaaataactaa	aatttagcag	tgcattggtg	tgcattgctg	62400
tgatcccagc	tgcttgggag	gctgaggcag	gagaattgct	tgaaccagg	aggcagagtt	62460
tgcagagagc	tgatatcatg	ccactgtacg	ctagcctggg	caaaagagca	agactccgtc	62520
tgaaaaaaaa	aacaaaaaac	aaaaaacaga	gatgccattt	ttttctttat	tgttttttgc	62580
tacatcttca	ttttcaggcc	aaatctaatt	tgttottacc	tctaggctct	agtaggctat	62640
taataacaat	tcttaaaatc	tcactaagaa	atcatcaaaa	tatttccatt	ttattttatt	62700
atgaatatct	ttttttctat	gttatttatt	catttttttt	tttatgagac	agagtcttgc	62760
tctgtcacc	aggctggagt	gcagtggcac	aatcatggct	cactacagtc	taaacttcct	62820
gggttcaagc	agtctctcta	cctcagcctc	tcaagtaggt	taggactaca	ggcatgcacc	62880
accatgccta	atttttttta	aattattttt	tgtagagaca	gagtcttgct	atgttgtcca	62940
ggctggctct	gaattcctgg	cctcaagcaa	tcctccctcc	ttggcctccc	aaggcgtaat	63000
tccaccctca	caccattttt	tttccagaga	tgggctgtcc	cgctgctaaa	tgagctatgt	63060
tgtgatttca	gcgaacaga	cttacaagga	atagcttcta	ctgtcagata	tccaaaggaa	63120
ttcctaaaa	ttattctcca	cccaagggcc	ctggaacctg	ggtctccata	gtttttgttt	63180
gtttgtttgt	ttttgagatg	gagtttcaact	cttgtttgcc	aggctggagt	gcaatgggtc	63240
gatcttggct	cactgcaaac	tccgcctccc	aggttcaagc	atctctctct	cctcagcctc	63300
ctgagtagct	aggattacag	gcaccgcgca	ccacgcccgg	ctactttttt	ttttttgtat	63360
tcttagtaga	gacgggattt	taccatgttg	gtcaggctgg	tcttgaactc	ctgacattag	63420
gcaatccacc	cacctcggtg	tcccaaagtg	ctgggattac	aggcgtgagc	caccgctccc	63480
ggcctccata	gtttcttttt	tctttaattc	caggaaagac	agcagttagg	tgagtaatgg	63540
aaattatcag	atgaaaataa	taatcttgtc	atctaattcta	gattcctttc	tgtgacccaa	63600
tttttagctat	tataagaacc	agaataaaac	ccatctgcca	tcacttcaga	aagtgccagg	63660
gaaaaagctc	aaggaaggct	tttatttatt	attttattat	ttattttatt	ttcttttttg	63720
agacaaagtc	tactctatc	gcccaggctg	gagtgcaatg	actcaatcat	ggcttactat	63780
agcctcaacc	ctctgagttc	aagtgatcct	ccctcctcgg	cctcttgagt	agtgggacta	63840
caggtgcaca	ccaccacgcc	cagctaattg	ctgatttttt	gtagagacag	gctctctcca	63900
tgttgcccgg	gctggtctca	aactcctggg	atcaagtgat	cctcccatct	cagcctccca	63960
aaggcctggg	attacaggca	tgagccactg	caccggcgcc	tgaggaagat	ttttaaacaa	64020
taaatagtag	agggggccag	tgaggtggct	cacacctgta	atcaatctca	gcattttgga	64080
aggccaagtt	gggaggcttg	ctccagccca	ggagttcaag	gttgcaatga	gctatgatca	64140
tgccactgca	ctccagcttg	ggtgatatag	caagaccatg	actctgaaag	aaagaaaaaa	64200
aaaagataat	aaattagcaa	gatataatag	catgataaag	ctgttttaaa	ttatgtttgc	64260
aagctaagtt	tacataggaa	agaaacattt	gctgcctggg	agaagaagtc	tcttcatttt	64320
taaaaaagag	atttttaaaag	aaatttttat	catcaaaatg	tagctgctac	aagaactatg	64380
atattgtacc	atctcgtata	tggtcctctt	actagcttaa	aacttgatgg	catgactctg	64440
aaagtgtaaa	aatggtaaaa	caaaaacagg	gc aaatgctc	agctgtcttt	tctttcagag	64500
aaactccaag	gcatgaagga	aacctcagg	taacaagttt	gtcccttcca	tctgtaaatt	64560
ctgcgatgag	gtgaccgacc	catttctcct	ttgctttcag	gtaggctctg	ctgatccctt	64620
ctcctctgtc	attgcccatt	gctcagcctg	actcaatcct	ttctcagtgg	ccacagccaa	64680
tgcaactggg	tgccctgggc	acccagaaga	gtgcaatagg	aagctgggtc	gctccggcca	64740
cctttagggt	ctgtgcacat	caccagcgcc	gttccaatga	ggccaatagc	tatggcagcc	64800
gtttttttgt	tttttttttt	tctttcctgg	atttttttct	tttttagtct	caaagatctg	64860
taggcaacgg	tggttgattc	cagttcccta	tctctaggca	tggtgcattc	aaaccaaaag	64920
ccttggtcag	aagattttcta	ttttccactt	tctattaaga	cagcaaggag	gggcccgggtg	64980
cagtggctca	cacctgtaat	cccagcactt	tgggaagctg	aggcaggcag	atcacctgag	65040
gtcaggagtt	cgagaccagc	ctgactaaca	tggtgaaacc	ccatctctac	tgaataatca	65100
aaaaattagc	cgggcggtgt	ggcgatgcc	tgttaatcca	gctactcagg	aggtcggggc	65160
aggagaatca	cttgaacctg	ggaggcagag	gttgcaatga	gctgagatcg	tgccatcaca	65220
ctccagcctg	ggtgacaaga	gcaaaactcc	atctcccaca	acacctccag	cataaaaaaa	65280
aaacaaaaaa	aacaaaaaac	aaaaacaaaa	aaacaaggta	gtgggaagga	agtcaaaaaa	65340
caactcaaat	tgcataattg	tgcccttggg	caagtgatgt	ggtaacattt	atttttctag	65400
taagattgtc	agttccagaa	gggcccagac	tctgtctctt	tgactgttct	atcacctgtg	65460
taggtgctca	taaataagtg	cttcttgagt	gaactcgtct	tctactctgt	gacaaatcac	65520
aaattctaac	atgttggtct	taatatgcaa	caagatacaa	gtcatctcca	aaaacctagg	65580
ttggcatata	gcctgtctac	cagttgccta	gagggatttg	gtataatgct	agcaagaaat	65640
ggtgatattt	cattacaatt	acagaagaaa	acattatgaa	ctcagatctt	ggaaagaacg	65700
gacactaata	tgcccaatga	atataatttt	cacagtatgt	ccagggtgtg	atgtctgtat	65760
tagaaacaat	gtcacttttt	gtgagtgtg	gtggtgtgtg	tctatagtcc	cagctaactt	65820
ggaggctgag	gcagaaggat	tgcttaagcc	caggagttcc	aggatgtagt	gcacaatgac	65880
tgtgcctgtg	aatagccact	gtactccatc	ctcggcaaca	cagtgaagac	ccatctctaa	65940
aaaaagaaaa	gaaatgaaat	gactgtcact	tttgacaagc	ttttaaaact	tcaactaatt	66000
ttcttcttaa	aatatttagg	tttagagaa	acttgctttc	agagtgaagt	ccttcagttc	66060
cattaacaca	taaatctcat	taatgtcctg	aaactcgtct	tataaaggct	tgaattcttt	66120
ctaaatcaaa	cagactacat	tggatctgtc	tgaaagtcaa	atgtgttgaa	ttgaaactgag	66180
tctcaaacct	atcttaacca	cgttacagg	gaaaactctc	taaattgatta	tgcttgttac	66240

FIG. 6Q

actattgttaa	ctttctagtt	accctataat	tttacttttct	tttttttttt	tccttttttt	66300
ctttttgaga	cagagtttca	ctcttgtggc	ccaggctgag	tgcaatggtg	cagtctcggc	66360
tcaactgcaac	ctccgcctcc	tgggttcaag	cgattctcct	gcctcagcct	cccagtagtc	66420
tgggattaca	ggtgccccgc	accatgcctg	gctaattttt	gtatttttag	tagagacggg	66480
gcttcaccat	gttggccagg	ctggtctcga	actcctgacc	tcaggtgatc	cgcccgccctc	66540
ggcctcccaa	agtgcctggga	ttacaggcat	gagccactgc	gcccagcccc	taattttact	66600
ttcttttaaat	gacatgaaat	tacattaaat	agtgaacaag	ggcagacatc	atcaaaagaa	66660
acagtgaaga	ccattaatat	tttgtcagac	tctatgcagt	gggttggaag	atacataaac	66720
ccagggagga	tgaatttctt	taccctcaaa	tagatccaat	tccttcccgt	aggctgaaga	66780
caacatctcc	aaaggtaaaa	atgagaaacc	caacaactac	ttgattgatg	agtaggcagc	66840
ctgctagtag	gggactcctt	cactcattta	caaatgagct	gggcattgta	ctcggccctg	66900
cagatgcaga	ggtaaacaaa	acagacccat	tgccctccctc	acaaagtttc	taggagctta	66960
gattttcacg	gagaagacaa	aacaatgaac	aaacacacac	atacctaaga	cagatcattt	67020
caggtgctgc	gcaggcccac	aaagataaca	caacagggtg	atgtgacagg	ggtgagttcg	67080
agagtctgga	aaggcctttc	caaggagaga	ataagagtaa	gttcgttccc	tttcaaaactg	67140
tattcgctcat	tctgcctgct	gactctattt	cggttggtct	ggtcgaggac	tgggtggctga	67200
ttaatgttca	atgaccacag	gggacagccc	aggccgacag	ttcctcaaga	ccctgcaggt	67260
caacgtttcg	caacttccca	agcctctccc	tgctccagaa	cgagcctgac	tcgcctccca	67320
gtttttccgg	taatctcctc	accgctccgc	tgtgcatttt	tacgcacgcc	ctccagggag	67380
cggtcctcgg	cgtccagctc	tcaggatgtg	gagagctgca	aatagcaccg	acagctgcag	67440
ctggaggtag	ccgcccggga	agccagccag	ctgctgccac	cacagggggc	agggccggcc	67500
gcgggcctcc	gcacgccttt	gtgagcagct	cagcggaacc	ctcgacgagg	cgggccgact	67560
cgccagtga	aattacggct	tttatttccct	tctgggtgca	cacgtgggga	gggagggagc	67620
ttggggaagg	agagtgtgcg	cccttcaacg	tttgccactt	ctcttcaaaa	ctgcctggga	67680
agtaggtcgg	caccaatagt	cacctcattt	gcacaaacag	ggacactgag	gtgaagggaag	67740
tgactgcacc	gcctgaacag	agccgagtga	cagggaagca	ggaatccatc	cagtctctgt	67800
gctcctggag	cctggccttt	tccttccggg	tttcttagtg	cttttacagt	atctcctgac	67860
catttccccc	ctgctacgtg	cagaagactc	accttctctg	gccacactcc	tcaacgagaa	67920
aatatgagga	ttacttacag	agccccactg	gaaatttgtc	tttaaagaag	gaagccttag	67980
ccgggtgtcg	tggctcacgc	ctgtaatccc	agcaatttgg	gaggccgagg	tgggcagatc	68040
tcctgaggtc	aggaattcga	gaccagcctg	gccaaacagg	tgaaactctg	tctctactaa	68100
aaatacaaaa	attagctggg	tgtggtgatg	cacacctgta	atcccagtta	ctcggggaggc	68160
tgagacagga	gaatcacttg	aactggtggg	gcggagggtg	cagtgagccg	agatatcgcc	68220
ccactgcact	caagcctggg	ggacagaggg	agactgtctc	aaaaaaaaaa	aaaaaaaaagg	68280
gccgggcgcg	gtggctcacg	cctgtaatcc	cagcaatttg	ggaggccgag	gcgggcagat	68340
cacttgagct	caggagttca	agaccagcct	ggccaatatg	gtgaaacccc	ctctctacta	68400
aaaataaaaa	attagctggg	cgtggaggca	ggcgccgtga	atcccagcta	cttggggaggc	68460
taagacagag	tgggactctg	tcaaaaaaaaa	aaaaaaaaaag	attcagacat	gagaccgtga	68520
aactgactac	agtcactatt	gcactgttta	tagatgttgc	cagacagaaa	gccccaaagc	68580
agcagcagca	tagtaccttc	ctaacacttg	gattgggaaa	tctagatttt	agtaaaaataa	68640
ctgggtgatac	ttacagaaga	aatggttggg	ttagagtagt	ccatcaaaaa	aaaaaaaaagga	68700
atcctagcct	gaaaggtatt	taaaaaatgca	ttcccttgcc	ctgccacaca	cagcggggaa	68760
cagggatggg	gccccagctc	gtgtgcaaac	ccaggcacac	cttccccaaa	gggaaagtga	68820
aaggtgacag	gagggaaagct	gaagcaagga	tgtcttgttc	ttcctgacgg	tgtcccgcct	68880
ttgctgagt	ggtgcactct	tgcatgggtg	taagttctgc	aggacacagg	cggctctcca	68940
ggcagcactg	acggggctga	tgcttggcac	tttggggcct	attcttccac	gaggacatgg	69000
attcgcttcc	ttggggttca	gcctgggtgtg	gaaaggagta	ccggaccgcg	tcaacgcgcg	69060
agaaactggg	accctgagca	cacaccctag	gtccagctct	ctatgggaaa	tggcctgaca	69120
gggtatggga	cagagcggcc	actgcttccct	ctgagcgaga	caaactttctc	tcctgaggct	69180
atagggctga	atgaagaaag	tagactgctg	aggtaggccc	cattcccctg	atgatcaggc	69240
agggccccgg	gggagcttct	cagggcagtt	ttagctcctc	tctcagcttt	taatgcaaaa	69300
aagagagaca	aaacctgatt	gagaaatgag	cgtagagcag	cagagctgta	cacaggaaac	69360
tgggtgcaaat	gaccgtgaca	ttgtagtgtg	ttttcatctt	tcttcttttc	atttttgttc	69420
tgcaacaaaa	aattgtaatg	tttatagttt	aaatgttaag	aatttagctg	gtgggcccaga	69480
tgcaatgggt	cacacctatc	atcccagaac	cttgggaggc	tgaggtggga	ggattgcttg	69540
aggctaggag	tttgagacca	gcctgggcaa	caaagtccga	tctccatctc	tacaaaaatt	69600
tttttgaaaa	atagctgggc	atgatgggtg	acgcctgtag	tcccagctac	tcaggaggct	69660
gaggttggag	gatcgtttga	gctcagaagt	tgcaggttgc	agttagctat	gatcaggcca	69720
ctgcactcca	gcctgggcaa	cagagcaaga	ctgtcaaaaac	aacaacaaca	aaataattca	69780
gctgggtattc	agtaacacat	gatacttaag	tgggtctgcct	aaaaaaataa	aataaaataa	69840
aaatacaacc	tttttaaaaa	aacaacccat	acaggttgac	aggtcaacac	tgaagactat	69900
gaaatcacia	gatttgcagt	gaatgagaag	cacaattata	ttcttcttct	ttttcagtta	69960
aatttgaaac	acgcttcagc	aaatatgtat	gtgtcttcca	ggtggatgtt	gcatttcagg	70020
tttcctttct	gttgccctaca	gtgctttaag	tctgctagaa	attcccttga	gagagaagga	70080
gatgttaaatg	cagaatatta	agtcctctgc	ctatcacatc	cataaagcca	cgcctacctc	70140

FIG. 6R

tctcccagg	gcatgagaaa	ttgctttcgc	gtgctatttg	gagaggcctt	ggcgctccaga	70200
aacaaagaaa	accaagaaac	aaagaaaagt	gatacaaaacc	aatgccctca	agacataaga	70260
taaggaagta	caaagaccta	aagaagcact	gagtttttaag	tcactgggtt	taaaaaataa	70320
ttcaagttaa	agcttttgag	tcactgcatt	tgtgacgact	ctcacttgac	cacttgctag	70380
tatgggtatc	cttgggcaag	tacccagcct	cctgtgcctc	aatttctcca	tttgtcaaat	70440
gggcacaaca	atcctactga	ctttataagg	tttcactgggt	atgtgtgaga	atttaataaa	70500
ataatccatg	gaaaatgcct	gccattatgc	ttggcatttg	gtgacagctt	aataaatcgt	70560
tagctatttg	tttcttttct	ttttcttttt	tttttttttt	ttttttttga	gatgggatct	70620
cgccatgttg	cccaggctgg	tcttgaattc	ctgatctcaa	ggaatttctt	gaattcnnnn	70680
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	70740
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnngctc	tgcatgtgct	cactgtaaca	70800
ccaaaacatc	tgcacagggtg	tgtgtgagtt	cacatcttct	ctatggcacg	atctgtatct	70860
tcatattttgt	atctctaggg	cctagcataa	ggtagtggga	acttaaatatc	aacagtgcgtg	70920
aaatcattcc	agagcactga	gattccaaaa	atctgcctct	caggggaagac	ttctctgctg	70980
agcctcaggg	ctgtatgtcc	aagtttctac	tgggtcatctc	tacttggtatg	taatacagat	71040
aactcaactt	taatttggcc	aatgccaaagt	tttcttgacc	cactctcttg	ataactaatc	71100
cactctcatg	ataaccatt	aatccatgta	tggattaacc	cattcacaag	gcttctcatg	71160
atccaatcac	ctcccaaagg	cccacttct	caatactggt	gcagtgggga	tcaagtttca	71220
acatgagttt	tggagggtgac	aaacattcaa	accatagcaa	tactatgcat	tacgcagatc	71280
accagatttc	tttttgtctt	tgtagaaatg	gggtctatgg	ggtgtctcta	tgttgcctag	71340
gctggtctca	aactcttggc	ctcaagtgat	cctctcgcct	cagctcccaa	agtgtctggga	71400
ctacaggtgt	gaaccactgc	atctggcctt	cccaaatttc	atccatocac	tctctcttca	71460
tatgggtccac	ctctcatcta	aggcccttga	tagctctcat	ctggactggt	atggaaagtca	71520
tctaactggg	tcttatctat	aaaatgggag	taaccgtatg	atttttgtaa	tgattgaatg	71580
aggatgcaca	ttacctcatg	ataataatag	caatggctag	cattgattga	gttataaac	71640
cctagtactg	agctgtactg	agctgcagta	gggggttaga	gctcaatcaa	tgctagccat	71700
tgctattatt	atccctcagg	gtctagttca	atcttttttt	tttttttttt	taagagatag	71760
ggtctcacta	tgttaccgag	tttggactca	aactcctggg	ctcaagtgat	cctccacact	71820
cagcctccca	tgtagttagg	actacaggga	tgtgccaccg	tacctggcaa	tttttaaaaa	71880
ctctagggtga	cctttctaatt	caatcttttt	ccattgacaa	tcaccttttt	ataaacgact	71940
gcagcactga	ttgtagtatt	catttttaaac	tgtacattct	ggtcatatgt	gtgtatctat	72000
ttctcacttt	ttgttttagtt	tttttgagag	agggtctggc	tgtgttctct	aggctgcagt	72060
acagtggcta	ttcatcagca	ccatcatagc	tcactgcagc	ctcaaactcc	tgggctcaag	72120
ccatcctccc	gcctcagact	cccaagtagc	tgggagtaca	ggtgtgtgtc	acaatgccta	72180
actatcacct	tttaactggt	caacttggga	gtactgggtg	gtgtattaca	ccttgtggta	72240
ggcggaactc	taagatgato	ctcgatgacc	tcccctaagc	ctcatcttta	gagaatcctt	72300
tctcctttga	acacaggcag	agtaagttag	tatgacgaga	gttgactccc	atgattaggt	72360
tgtgttagat	ggcacagctg	aagttaatgc	tacaggagat	tacccagggtg	ggcctgaccc	72420
tcatacact	aatcatttaa	aagcagagcg	ctggaggcag	atggaggatc	agagattcaa	72480
agcacaagaa	gactaggact	cgcccttgct	ggcttgaagg	tgttgggggt	cacaggaaaa	72540
ggacctgaaa	gcagctttta	gaaccagaca	gcagtgcctt	actatggatc	agcaagaaag	72600
tgggacctca	gttacagagc	cacaaggaag	tggattctgc	caacagaacc	tgaatgagct	72660
tggaaagtga	tgtgagctca	atlttgccaa	caccttcatt	tgggcttctg	ttcccttgag	72720
cagagaacct	gactatgcca	aactgaactt	ctgaacctaca	caactgtgtg	ctaatacgtg	72780
ggtgctgctt	gaagcctctg	tttgtgatca	tttttgtcat	gcaacaatag	aagactaata	72840
gtacttctct	tcagtgcctt	cactattgaa	caaaactgaa	tttaacatta	cattcaataa	72900
atactcactg	agaaaacatt	aataattgaa	ataactttat	cttatcgcca	gtaaggtcat	72960
aatgccagct	ggccttttct	gcctattatc	aacattaaaa	actattttta	caaagatttt	73020
aatttgaaca	atatctgtca	tgctcatttt	atattttattg	aatttgctaaa	aaaaaaaaaa	73080
aaagcccaca	ttattctaga	agggatgttt	ttagaaaaaca	tgaagggaat	tattttaaagc	73140
agagatgcac	cttgaacat	ttaatacacc	caggggctac	attgtagttt	caggacacca	73200
aaaatgagct	agtagaatat	tttacaact	aaggtaatca	tcaaaagagt	ttacaggtaa	73260
aatttctttg	catgaattac	cattacaaag	aaagatttcta	tataacaaaac	ctacttccga	73320
ggtccttaga	aacaatggtt	tgttggtttc	taaaaatttt	tatttataaaa	gtctggcaaaa	73380
tgctacatac	aacactccac	cttccccctt	cacccccgga	gattttacagt	ccatattacc	73440
gtattaaaaa	ctctatgaag	tcatgaagtg	aatctaccca	tttaattttt	ttaatacagc	73500
atctcccaaa	tatacttacg	acagaatctt	tcttttgagaa	ataatttttg	acctcttgca	73560
gaaatgcaat	ttgggaaatg	ctggcctgaa	caaattctct	cctcctgacc	aagtattaaa	73620
tcaaaatagt	aggactacaa	ggaatatttc	agaagttaaa	ttgattcaag	atattcaaga	73680
gctggtaaag	tgtcttcctc	ctttccttat	ggactatagt	aactttttcac	taattttttt	73740
ttacttgagt	caacaaattt	gaaaagtgat	ttttaacaac	tgtatttaatt	ttacaaaaat	73800
accatacag	caaagtaaat	gttccaagga	atltttctaga	atagtttcag	ccataccata	73860
tatgtatttg	tgcattatca	cagtgaattt	tttttatata	agaggttgtt	ttgtcatcta	73920
atactttata	atlttaatgca	gaaaacactt	aaaactgaca	aactttttaa	tatattttta	73980
gtcgatgtta	aggaggaggt	agaaaaatag	aatcagggct	gggcatagtg	cctcctgcct	74040

FIG. 6S

gtaatccag	cactttggga	ggctgaggca	ggaggattgc	ctgagtctat	gagtttgaga	74100
ccagcctgag	caccatagtg	agaccctgtc	tatacaaaaa	ataaaaaatt	agccaggagt	74160
ggtggtatag	tcctgtagtc	ccagctactt	ggaaggctaa	ggtgagagga	tcacttgaga	74220
ctgggagatc	gaggctgcaa	tgagctgtga	tcacaccatt	gccctccagc	ctgggtgaca	74280
gaacgagacc	cagtctcaaa	ataataataa	taagggttcag	aatttttaggc	taggggttctt	74340
gtgcttttaa	atacataaat	gctaaaaaaa	agttccaagt	atataaaaaca	tgaaaataag	74400
tatttcgaat	gtgaagaaat	tgaatttgaa	atagagctgt	gatgtacttc	caaaaagaag	74460
gaatgacctt	agaatcctat	ccaaattctt	ggtctagttc	agtggttctc	aaacttttagc	74520
agggttttaga	acctcctgga	aggcttggtg	aagtacagggt	tgctggcccc	tgccaccaga	74580
atctctgagc	caatggtctg	gggtgagacc	cccaaaatat	gcgtttctaa	caagttccca	74640
ggtgagtgtg	agctgctgtc	caggaagcct	atcttgagaa	ccactgagaa	tgcatgttctt	74700
ataccaacct	gctctgagat	tctcattcaa	cagctgtctg	ggaaaagctg	cataggtgggt	74760
tttaattgtgt	accaatttct	cagagccttt	ttgtttgtgt	tttgagacgg	atctctcgctc	74820
tgctacccag	actggagtg	agtggcacag	tctcagctca	ctgcaacctc	cacctccagg	74880
gttcaagcga	ttctcctgcc	tcagcctcca	gagtagctgg	gactacacca	tgccctggcta	74940
atctttgtat	tttttagtaga	gatgggggtt	caccatgttg	gccaggctcg	aactcctgac	75000
ctcaaagtat	cgcgcgcct	tggcctctca	aagtattggg	attacaggca	tgagccactg	75060
cgcctggcct	ctgagagcct	tctgctctga	agttctgtga	tttgggattt	tgctgtaggt	75120
tatgcttggt	ctgggtctgc	atctcaaatc	ctctgtagtt	ctctccacgg	gtatttcagc	75180
atacaaaaac	caaaaatcag	aaaacaaaaa	aaccacagaat	gctgggacaa	tcaatgtgaa	75240
agaaacttta	ttttatatct	caccagcaga	atcttacagga	gaacactgga	aactataact	75300
gtagattctc	acttggtgtt	gctttgactt	ccatcgagta	acatggaaaa	cccagagctg	75360
gccaagtgtg	ctggttagtgt	agtcagagaa	agaccagaag	tctgcaactg	ccttctaact	75420
cttatatctg	gctgggtgtg	gtggctcacg	cctgtaatcc	gaacacttat	gggaggctga	75480
ggtgggagga	tcgcttgagc	ctaggaattt	aagaccagcc	tgggcaagat	agcgagactt	75540
catctctact	aaaaataaaa	ataaaaaaat	agctgggtgt	ggtggcacat	gtccatagtc	75600
ccatctactt	gagatgccaa	ggtaggaagg	ttacttgagc	ccaggaattc	aaggctgccg	75660
tgagctgtgt	tcacgctact	gtactccagc	ctggacaaca	gagaccttgt	ctgaaacaag	75720
caaaacaaaa	cacttctata	tccagctgtc	ttttcctatt	tccctttgtg	ttgaattgtc	75780
tgtgattttc	aagacccaat	ttagatcagc	cataaaagggt	tccctggcaga	acatcgaggg	75840
catgatcttt	tggagtcaga	cagatccagg	tcctagctct	gtcatttagt	tgctgaagga	75900
ctctgggaaa	gttattttaat	attccttaac	ctcagtttcc	tcttctgtaa	aataggagaa	75960
attgtattat	accttctaca	tattattatt	gttaggtgcc	aatgagaaat	gcttgaagag	76020
catttagcac	agtgcctgac	acagagtaag	ggagcaatag	atagcacaca	gctcttaaca	76080
ttcatagaaa	cctttttttt	tttgattcag	ggtctcactc	tcttgccctag	gatggagcac	76140
agtgtccaca	agcatggctc	actgcagcct	caacttccca	ggctcaagcg	agcctccac	76200
ctcagcctcc	caagtagctg	ggaccacaaa	aaaaaaaaaa	aaaagctaca	tgccaccaca	76260
cccagcta	atctttatctt	atctttatctt	tatttttatt	ttttagagaa	tggtgggtctg	76320
tcttgaaattc	ctgggtctca	atgatcctcc	tgccctggcc	tcccaagggg	ttgggattat	76380
gggtgtgagc	cactgtgccc	agcccaaat	aacattctct	agacagtcct	ggaataaagt	76440
tcaacaaatt	tcaatgcttg	agtagtgaga	attatgctat	aataattttc	aggctggatg	76500
cgggtggctca	tgccctgta	cctgcactt	tggtgggccc	aggcgggtgg	atcatttgag	76560
gctagcagtt	caagaccagc	ctggccaaca	tggtgaaacc	ccgtctctat	taaaaataca	76620
aaaattaggg	agacgtgggtg	gcacacatct	gtagtcccag	ctactcgagg	ggctgaggca	76680
gaagaatcgc	ttgaacccag	gagatggagg	ttgcagttag	ccaagatcac	accactgcac	76740
tctagcctga	gtgacagagt	gacactctgt	ctcaaaaaaa	aaaaaaaagta	aaaaggccgg	76800
gcgcggtggt	tcacgcctgt	aatcccagca	ctttgggagg	ccaagggtgg	cggatcacga	76860
ggtcaggaga	tcgagaccat	cccggcta	acagtgaac	cctgtctcta	ctaaaaatac	76920
aaaaaaaaaa	attagccagg	cgtgggtggc	ggcgctgta	gtcccagcta	cttgggaggc	76980
tgaggcagga	gaatggcgtg	aaccacagg	acggagcttg	cagttagctg	agatcgccac	77040
actgcactcc	agcctgggag	acaaagcaag	actccatcaa	ttaaaaaaaa	aaaaatcaac	77100
atagcagcta	aagatgtcac	attgaactta	gaaaacagtt	cctgcccacc	tcaagaacta	77160
tctttcataa	taaatactaa	atatgatcaa	attgtaagccc	attgatgcag	cattatatta	77220
tgagtcctt	agaaaggaaa	aatgttctct	taattaaact	aaactatgag	atgatgcttc	77280
cttatcactt	accatcttat	actttttgaa	attgctcttt	tagacttaga	tttttaaaat	77340
atttaacact	cttttgcata	cataaaaagg	aaaatatagg	caaaaataaat	ggatttaaaa	77400
tatccctaaa	ttgtcttctt	ggccaggcac	agtggctcat	gcccataatc	ccagcacttt	77460
gggaggccaa	ggcaggagga	tcactggagc	tcaggagtct	gagaccagcc	tgcccaacac	77520
ggtgaaaccc	catctctact	aaaaatacaa	aaactagctg	ggcatcgctg	cacatcgctg	77580
taatcccagc	tactctggag	gctgaggcac	gagaatcact	tgaacctggg	aggtggaggt	77640
tgagtgagc	caagatcggg	ccactacact	ccagcctggg	caacagggtg	agactccgtc	77700
tcaaaaaaaa	taaaaatagg	ctgggcccag	tggctcacac	ctgtaatccc	agcacattgg	77760
gaggccgagg	cgggcccgtc	acttgaggcc	aggagtgttg	gaccagcctg	gccaacatgg	77820
tgaaccctgt	tttccactaa	aaatacaaaa	attagtcagg	tgtggtggcg	tatgcctgta	77880
atcccagcta	cttgggtggc	tgaggcacga	gaatcacttg	aacctgggag	gcggaggttg	77940

FIG. 6T

cagtgagctg	tgatcaggcc	actgcacttc	agcctgggccc	acagagtgag	actccgtctc	78000
aataaataaa	taaataaaaat	aaaataaaaat	aaaattccca	aattgtcttc	tcattcagaa	78060
tctcagcctt	gtgaatcact	tgtttgactc	agagtctgct	tcactgctta	ttcactcagt	78120
atcgtcctct	gtgccacca	gggactgggt	gatgcagcat	ttcttaagag	aatccaacag	78180
tactaaaagc	tcttggggct	gggctctttg	cttgcctatt	tttgattcct	gcttgaagat	78240
tattggcaag	cacgtgatga	tttatcatte	tccccacctc	ttttcccata	aacatttgggt	78300
tcccaggaag	gaaaggagcg	cttcaactctt	ccttctggga	ttttattcca	ggcaactgat	78360
acccatttttc	taagtttgga	cactagtgtc	tttgatgttc	atggacatga	cgactgtggc	78420
ctggcaagca	gattgtgaga	cctcttccat	tatgtgtcct	gaatttcaga	catgttggta	78480
agagggtta	caagccagag	actgatcttt	gctggagttc	agttccattt	ggtcatttgc	78540
tgaaaaccca	gtattattat	caatggcctt	tgtgttgccc	ttatttttttc	ccagaacggt	78600
tttattgaaa	tgaaattcac	ataccatata	atctaccac	ttaaaatgaa	aaattcaatg	78660
gagtttagta	tgttgagaat	gtactgataa	tcaatttttag	tacaatttca	ttacccagag	78720
aagaaatcct	ggaccaatta	gtagttagta	tccatttcctc	ccctgactcc	aagcccctgg	78780
ccaccattaa	tctacttttt	atctctatag	atttgcctat	tctggatatt	ttgtataagt	78840
ggaattgcaa	tatgtgggtc	tttgtgactg	gcttcctttc	ccttagcataa	tgttttcaag	78900
gttcatccat	gttgtagtat	atgagccctt	catatccttt	tattgttgaa	taatatcagt	78960
tgcatggata	tattcacattt	tatttattca	ctcatcagtt	gatggacaca	tgagtgggtt	79020
ctgcttttgg	ctattatgaa	taatgctgct	ataagcattc	atgtacaaga	ttttgtgtag	79080
atacgtgttt	tcacgtctct	tgggtatatc	cctagaagta	gaactgctgg	atcacaggat	79140
aagtcaatat	ttacctgttt	gaagaacagc	caccttgtat	tccaaagcag	aggaaccatt	79200
ttacaatcct	accagcagta	tatgaggggt	tcaatttctc	tacatacttg	tccaacactt	79260
gttattatct	gtttttgtga	ttagaacctt	cctagtgggt	gtgaacttat	aactcattat	79320
ggcattgca	ttatttttaa	agcactttca	ctgcattttt	ctcatttgat	ccttgcacaa	79380
tttatcaaca	ttcctttatac	acagtcaatg	aaacaaacat	taagagtaat	tcactgactt	79440
gctcaagata	gcttagtgac	agaatgtgag	ttaaaacata	attatgatac	tttttttttt	79500
tttttttggg	caagacaagg	tcttgcctctg	tcacccaggt	tgaagtgcag	tggtatgatc	79560
atagctcact	gcaatcttga	actcctggac	tcaagtgatc	ctctcacctc	agcctccttga	79620
gtagctggga	cgcaggttag	atgccatcat	gcccagctaa	cttcttttatt	ttttgtagag	79680
actgggtcct	gacatgttgg	tctcaaaactt	ttgggctcaa	gtgatccctc	catctcagcc	79740
tcttaaagtg	ttgggattat	aggtgtgagc	cactgtgcct	ggacataatc	tcgcttctag	79800
ttcttgagac	cattgccttt	ttaccctctc	gggctgttcc	aaccccgagg	tagctacctt	79860
actgtgatag	agtcaggtca	agagtgatga	cgaattagag	gtaaaactggg	gagggggagg	79920
actgggtgca	gaaatgctgt	caggacatag	tatgacaaca	ccacttttagg	tgatatggca	79980
tggctactgg	catctgcaag	acagcaatag	ctagtgaac	catatttttg	gtttgcagca	80040
gctcagtaag	atggatgtga	tattgggaaa	aggctcagtt	atagccttggg	ttatgaaggc	80100
aaacaagtct	aaaagtcttt	tttttttttt	gagacaaggt	cttgctctat	tgccctgggt	80160
ttagtgcaag	ggtgcaacct	ccacttccca	ggcacaagca	ttcttcccac	ctctgcctcc	80220
tgagtagctg	ggactacaag	catgcactgc	cgtgcctggc	tcatttttgt	atttttagta	80280
gacaggggtt	cgccatactg	cccaggggtg	ctagaattc	ctgggttcaa	gtgatccacc	80340
caoctcggtc	tcccgaagtg	ttgggattac	aggcgtgagc	cactgtgcct	ggcccaactt	80400
gcaacaaatt	ctatagcctt	gccttcacag	cctacaggaa	atggctgtac	catccagggt	80460
ggtctacttt	tggtacaaca	gttctttagt	ttataacatt	ggggaagaat	gactttctag	80520
ctctgcctat	ctcccagcag	gtacagtaga	catcagcctt	ggttacagga	ttcattactt	80580
tttgtgttta	tgaactgaga	gaactgaaaa	aattttgtct	acgcttacat	tttctattca	80640
tgaactatct	cctttttgtg	cataaaaaat	aattttttat	gaaataatct	ccttggagggt	80700
taagtgtctc	agcaccactc	cttcttagtc	aaagaaactc	tgacacattg	tcaaccctgg	80760
ctgagcaagg	gaaaaggcct	ctaaataaag	ccttctact	ttgctaggaa	aagtcaactt	80820
cgaatcactg	gaccataaaa	tcttatttga	gttacagagt	gagataggtt	aatcagcatg	80880
tggtatatct	atctactgaa	gccaaagttt	ttttttcagg	atttgtccaa	aagatgttac	80940
cactctttgt	acaacaaaaat	gatatttaga	tagggcccac	tctctgcata	tgctgggtgtg	81000
gttgaaagaa	ccagtgtcct	tttcacacgt	aagccatgct	cagcctatcc	cctcatcttg	81060
cttacagcag	ctgctacttg	taccatctgg	tgtctcattt	ggcattttgtt	tttgttgggc	81120
cctttttttt	tgtttgtttg	agatggggcc	tcactctatt	gcccaggctg	gagtgcagtg	81180
gtgccatctt	ggctcactgc	aaccccaatc	tcccagactc	aagcaatctt	cctgcttcag	81240
cttctctatg	agttgggact	acaggagagt	gccaccattc	ccccactgtt	ttttttgtat	81300
cctttgtaga	gaggggggtg	attagtccat	tttcacactg	ctataaagaa	ctgctggaca	81360
catatacacc	atggaatact	atgcagccat	aaaaaaggat	tagttcatgt	cctttgcagg	81420
gacatggatg	aagctggaaa	ccatcattct	cagcaaaacta	acacaggaac	agaaaaccaa	81480
acaccacatg	ctctcactcg	taagggggag	ttgaacaatg	agaacacatg	gacacaggga	81540
ggggaacatc	acacaccagg	gcctgtcaag	gggtggggag	caagggggagg	gagagcatta	81600
ggacaaatac	ctaagttaga	tgatgggttg	atgggtgcag	caaaccacca	tagcacatgt	81660
atacctatta	ataaaacctg	cacgttctgc	acatgtatcc	cagagcttaa	agtatattaa	81720
aaaaaataaa	aaaaaaagaa	aaaaaaagaa	gaactgcctg	agactgggtg	gaaagagggtt	81780
taatcgactc	acagttgagc	acggctagga	agacttcagg	aaacttacia	tcgtggtgga	81840

FIG. 6U

cgggtgaagg	gaagcaaggc	accttcttta	caaggcgcca	ggagagggaa	tgaatgcagg	81900
aggaactacc	aaacacttat	aaaaccacca	tcagggtgct	gtaatcccag	ctacttggga	81960
ggctgaggca	ggagaatcat	ttgaacccag	gaggcagagg	ttgcagtga	ccaagatcgt	82020
gccattgcac	tccagcctgg	gtgacaagag	caagactctg	tctcaaaaat	aaaataaaat	82080
aaataataat	aataataata	ataataat	gggtgaaat	ttcaacagac	ttggctaact	82140
gaaactggta	tatgaagtta	ccaatattta	tgtctgtaac	catctgcagt	ttatacactt	82200
gaaaagatat	ataaagattt	ggtcacattg	tatttcacca	caggcccttc	ctaagattta	82260
tttcttaatt	ggaaccttgc	ctgtgggttat	atatgcgttg	tttttttatc	acatagtaga	82320
tatccaacaa	ataagtatta	aacaaacaaa	tacattctta	ttttagggcc	agacagaaca	82380
aatcggcata	gtaaaatgg	tacaaatatg	gctttgaagt	ctaacaggat	tgagtttaaa	82440
tccgaactct	gctaactatt	aaaataatag	aagtttctta	atctctctaa	gctcagactc	82500
catgtataaa	atggcaaaaa	taagaataga	aacctcagag	agtaggtgga	agaactggat	82560
gatcaattgaa	agcatctgat	catttaaaaga	taaatgatca	ttcagcacag	tgctttgaca	82620
ttgtatgttc	ctgataaatg	acagggtgtaa	ttttgttgct	atcaccattg	ttgttattta	82680
gaaatggcct	ttagggatgc	acaaaatatt	gcagcaaaa	gtctcagtat	tcttgttctt	82740
tggcgctact	ccaaccccc	ctgggtttttg	tgacatcaga	tgtgaaccac	agcaaaggaa	82800
gagatgaaag	aataaagtat	ctctcaagac	agactcaaag	atccttgaca	gtagggctct	82860
gtcctatgac	tctttagccc	agttgtttttg	cacatggagg	tactcactaa	atgtttttta	82920
taacaagaat	attgaggttc	tttaattatgt	aaaaaaattc	aacatactta	aaagctacta	82980
aatggcaaac	taataacttt	ttgcaaaaagg	aaactaatac	tttgttgaaa	attcttataa	83040
aacaagttgt	atctcataag	attgcacaga	aacaaaatat	taaactccat	tattaacata	83100
aaaaaaaaaa	ccatcagggtc	tcacgggaac	tcactcgcta	ccataagaac	agcatgggga	83160
aatggccctt	gtgattcaat	tacctccatc	tggtctctcc	cttgacagg	ggggattaca	83220
attcaagatt	agattgtggg	gggacacaaa	gcctaacctt	ataatggggg	tttcgtcatg	83280
ttgcccaggc	tggtctggag	cttctgagct	caagcgatct	gtccgctttg	gcctcccaaa	83340
gtgttgggat	tataggcatg	agccactgtg	ctcagcctgg	caattttttt	taaaattgga	83400
aggcaatatg	caacattaaa	taaccacat	ctaacaactt	ttattttctt	tttttgagac	83460
agggtcttgc	tctgatgccc	aggctggaag	gcagtagcat	gatattggct	caatgcaacc	83520
accaccttcc	aggttcaagt	gattctcacg	cctcagtcct	ctgagtagct	gggattacag	83580
gcatgcacca	ccatgtctgg	ctcatttttc	tctttttagt	agagatgggg	tttcaccatg	83640
ttggccaggc	tggtctcaaa	ctcctgacct	caagtgatgc	gcctgcctcg	gcctcccaaa	83700
gtgctgggtt	tataggcgca	agccactacg	cctggcccaa	acacatatta	tataccacag	83760
acttgtgaat	tattcattat	ttctctaact	ctatgagatt	gtatttttta	ttcccatttt	83820
gcagatgata	aatgaaggct	gagagacatt	aagacagaga	acagtgagac	tggttctgct	83880
tgcataatcat	ttcacctctg	agtctgagat	tcttcatcca	gagagatctg	caacctcacc	83940
agataaccta	aaaaaaatta	aaatcaaatt	gctaatca	cagtgcctgc	catatagggt	84000
tattgggaca	tgacgtctac	gaggaacctg	acagtgcctg	gcacacagca	agaccttgat	84060
atggggagac	agcaagcctg	ccaccacgag	ccctagctcc	accatcacta	aatgacttgt	84120
cccaagacaa	ccagaaagg	gcctctgccc	tctgtcgcca	aagctcctct	ccataccaca	84180
gagccttctt	gtgagagagt	ctgtgtgtct	ttattttctt	tgctgtttat	cacaagtgtt	84240
ctaagtattt	agcagcactt	ggcactgttt	tgtctcagat	cacaatcagc	ctgaggtccg	84300
tgctccatta	ggaatgtctg	ctcattctta	accgcagctg	tttccacaca	tccttctgat	84360
ggcctttggc	tttacatcct	gcagctacgc	aggctccttg	gccaggagga	gcccgaggga	84420
gccgagcccg	ccttttaaca	agtagcatgg	gtcattcccc	gctagaggct	caagagtcc	84480
cacagagcag	gggcccgcag	ggctgtgcat	cgggtgctga	accttctctc	tccagggagg	84540
cgggcgagaa	agctgagaag	gagcagtgat	ctcaaaaatg	gaatgggacc	tgcttgggaa	84600
ggcagttgct	gggcctagga	cttaggtccg	tagtctgttt	gccagaactg	aaacttctagt	84660
tgtaagaaac	ttcagggaga	agctggcctg	tcagctcacc	aagggaaggaa	cctctcgga	84720
tggtggggcc	cctgaccttt	gtccccaccc	tgagactgcc	atgtagctcg	gtgagtaacg	84780
cctgagttgg	ggtggttagct	cctacctctg	agcctcttcc	caccttccct	agatgtcggt	84840
ggtccacagt	ggctggggac	ttgcttctat	gaatgacata	tgattgcctg	tgtctatgcc	84900
accacttccc	ctgagaaagt	gggctgtcac	ttcctcaggg	tcagcatcac	cacgacatcc	84960
agcactgccc	ttactgcag	aaacagaagg	cgccgataca	gtgtgacaca	aaaagagatg	85020
gagaggagat	gggcaagctc	acctttactc	agccctgacc	ccacacccag	ccctatgctg	85080
tgctgaagtt	attattcata	aatgtccaca	agactccaaa	ggagtcttat	tcctgtctcc	85140
agagaaggga	atcaaagctt	aaaaataacc	ttcccaagg	catatagcca	aatgttttagt	85200
gaagtcaagg	ttcaaagtca	aactctgaaa	gatgtgtgct	cttcccccca	tagtagaatg	85260
ccttccatag	cccctaatac	tataccctcc	tgttgccttg	tctcttttaa	aattgaaatt	85320
ttaaaaaggc	aaaccagggtg	ttatttcaaa	atctttttaa	aagttgagaa	caactgtttg	85380
aagagagctg	tcagtggatt	tatgcactct	gggtgaacct	aattggaaaa	agcaggcact	85440
tttacagcag	cgcattctca	tgcggtctta	acaacctgac	ccagagcagg	gaactcggtg	85500
tgctgcagcg	ccagtgaacca	ggcaaccctg	ctcctgggct	gttttctacg	tacaggtttt	85560
gactcagggc	tcccatcgcc	agcaaaatgt	aaatatgaaa	tgtctttttt	caggtgggga	85620
atgaggtgca	gtgatcttga	gccatttacc	ttctttctag	gccaaaccaca	accaactggg	85680
accatcagag	ggatggggtg	aaggagattt	gtaccattca	gaagggataa	ctgaagggtg	85740

tcccagccca	ggggcccttcc	cttttgagga	acagaaagat	cactactgtg	gtggggggag	85800
ggtgagatca	tattaaccca	taaaaggact	accgtattgc	gctcccttgc	ttttgactga	85860
gtttacacaa	acttgtagg	tcacgtttgt	tgcctctggt	tgaccagacg	cccgcatatg	85920
cagttatata	catatttgc	taatttttcta	aaaagagaaa	caatgagtta	gttgtgtatg	85980
ctgtgtgttt	ggaagataac	atctcaaggc	atgacatcca	tagagaacag	ctgataagtt	86040
aaaaacggag	aactactggg	atgtggaagc	tgcgaaagaa	tcaggggaaa	catcctcaac	86100
tgaagtttgc	ataagattga	attttggggc	cgggcgcggt	ggctcactcc	tgtaatccca	86160
gcactttggg	agaccgaggt	gggctgatca	cgaggtcagg	agatcgagac	catcctggct	86220
aacacggtga	aaccccgctc	ctactaaaaa	cacaaaaaaa	ttagccaggc	gtgggtggcgg	86280
gcgcctctag	tcccagctcc	ttggtaggct	gaggcaggag	aatggtgtga	acccgggagg	86340
cggagcttgc	agtgagccga	gatcgcgcca	ctgcactcca	gcctgggcga	cagggcgaga	86400
ctgcgtctca	aaaaaaaaaa	aaaaaaaaaa	aaaaaaaaga	ttgaattttg	gatgtcttgg	86460
gtagtcagaa	agaatcacat	cctttataat	tcggtatttc	tggatggtga	aatgaagaaa	86520
gcagtaaaga	catcctaaat	gatggaaaag	gcaatggtgt	ctgtgagttt	ctttaccac	86580
atctccatca	caatgtgacc	ctgcacagtc	tctctgcgtg	ccccctttag	ggacattacc	86640
tgctcagaga	ggtttcacat	ctgccaaaggc	cactcattct	gaaagggaga	aataatgtgt	86700
attggaacaa	actttatcat	tgactttatgc	tgggtcacgg	atgtcctatg	aaccaaggac	86760
aactaatgag	gcaagaagta	actgagctat	caccaaaaag	ctgtttgcaa	agttatctga	86820
acattcttcc	tacattttaa	gccctgtcca	catttttgcca	catttttaag	tttctttata	86880
gttgtttgaa	acatgaccat	ttcaaactat	gatttttgaaa	tgaagttcca	tgaaatccct	86940
taggcatacg	aggcactgct	gggtgatgaa	cgcaaaacttg	attcacttgt	attggctcct	87000
ccagatgctg	agtcattatg	atgccagatt	tcagtggagaa	aaagcacata	gagaatattg	87060
gacacgattt	ctatcgttgt	gaacaaagggt	gaatagatag	atggcccat	tcagccaggc	87120
ggattcaggg	atgctgaaac	agcagccata	cagctaacag	atttctatgc	aaaaaaatat	87180
gccactatcc	aatctgtctc	ccacacacat	cttctctctc	tgtttttcct	caacattcta	87240
tccaggacca	cgtttctaag	catattattt	ccctgccacc	atctaaccac	actctaggcc	87300
agacttccaa	ttggattttgc	agaatgtgca	taacattttcc	aaatggatgg	tggcaataaa	87360
gaaatgatgt	cttcagtcctg	atgaaaaaaa	ttcaaattca	acaatgacac	ccattatttc	87420
acatactgaa	ttaccaaaaga	tttaaaaaata	ataacaaata	aaagcaataa	taagacaata	87480
atatataata	cacaataacag	ttgagcatcc	cttcactgaa	aacccaaaat	ccaaaatttt	87540
ctaaaaatttc	taaaacacct	gacttcttgt	gatgggtcac	aaaaattact	agaatgttg	87600
cataaaaatta	ccttcagggt	acctgtatag	agtgtatatg	aaacatcaat	gaatttcctg	87660
tttagattttg	ggtcccatgc	ccacgatatc	tcattatgta	tatgcaaata	ttccaaaatc	87720
ctaaaaatata	tgaagtctga	aacatgtctg	gtcctgagca	ttttgtgtaa	agaatactca	87780
acttgtctcag	gtaaaagtgt	gtaggggaaa	aggaactcat	acatgtactg	ctgggagcag	87840
aagtcagtg	caattatcca	catggatacc	cattggatacc	ctttgaccaa	tactagtccc	87900
cctgtaggaa	tttatcttac	agatctgctc	actgaagtgt	gcaaatatat	aggtaaaagt	87960
atttttgttag	ctctgctaac	aatagtgaac	attctgtcaa	taaggggaatg	gtgaaataaa	88020
ttacatctac	aaagtagaat	attatgcagt	tcttaaaaaa	gacatagtat	atataaatct	88080
ctggtgtgga	aagacttttt	ttatatgctt	catgatctta	ttggtgcaac	aagaacacaa	88140
atgctgtggt	ggcattggtg	ctcatgcctg	taatcctagc	actttgggag	gtggaggcag	88200
gcagattgct	tgagcccagg	agttcaagac	cagcctggcc	aacataacga	aatcctgtct	88260
ctacaaaaaa	tacaaaaatt	agctgggtgt	ggtggcacat	gtttgtagtc	ccagctactc	88320
agaaggctga	ggtgagaagg	tcacctgagg	ccagaaggtc	gaggctgcag	tgagctgata	88380
ttgtgccact	gcactccaga	ccgggcaaga	gtgagaccct	gtctcaaaaag	acaaataaaa	88440
aacaagtga	cacacacatt	tgcatatgca	cagaagctgt	gaagaccata	cactgaacca	88500
ctgccatctt	tgggtagtgg	gactgaaagg	ttggtgaaa	ttgatgactt	taaggtttta	88560
ctttactaac	tgcagattttg	tttttcatgt	ttaggatgag	cttaaatgtc	tactataatt	88620
ttaaaaatta	aaatgaatga	tggcatcccc	tgtgacagggt	gccccgagcc	tgctgattaa	88680
agctaataga	agaaaagaga	acaaggcctc	aactgaaata	atgaatctat	caagaataaa	88740
aaaagaggggt	atgtattcac	acagaaaccc	taggcacagt	ggctattcat	tgctacagga	88800
atattttaaag	atgtagcgca	cccacgctgg	aagtggaaat	ctcataacaa	ccactaacta	88860
ctcggaactg	ctatgctagg	taacatatac	gtgtgtgtgt	gtgtgtgtgt	gtgtgtgtgt	88920
gtgtgtgtgt	gtgtgtgttt	tcagcgaaat	ttttttctctg	aatatgaaag	tcacacatgc	88980
tcattgtaaa	atattttaca	gctgggtcgg	tggctcacgc	ctgtaatccc	agcacttttg	89040
gaggccgagg	tgggcccgatc	acctgaggct	aggagttcaa	gaccagcttg	accaacatgg	89100
tgaactctca	ctactaaaaa	tacaaaaatt	agctgggcgt	ggtggtgggc	acctgtaatc	89160
ccaactactc	gggaggctga	agcaggagaa	tggcttgaac	ccaggaggtg	taggttcgag	89220
tgagccgaga	tctcaccatt	gcactccagc	ctgggcaata	gggcaagact	gtctcaaaat	89280
aaataaataa	ataataaata	aaataaataa	taaataaaaac	atttttacaaa	acagaaatct	89340
aaagtccttc	ataattctac	ttcccaaaga	tagccacggt	tatggtatta	tagatttctt	89400
tatgcatgtc	cataatctat	gtattttttaa	aaaatcaggc	caggcgcagt	ggctcacacc	89460
tgtaatccca	gcactttggg	aggccgaggc	gactagatca	caaggtaagg	agttcgacac	89520
cagcctgata	aacctggtga	aacctgtctc	tactaaaagt	acaaaaatta	cccgcatgg	89580
tgggtgtgcac	ctgtaatccc	agctactcag	gaggctgagg	caggagaatc	gcttgaaccc	89640

FIG. 6W

```

gggaggcgga ggttgccgtg agctgagatc tcaccactgt actccagcct gggcgacaga 89700
gcaagactct gtctcaaaaa aaaaaaaaaa aaatgggggc aggattttgc aacttgtttt 89760
ttttccacta agcagtgcag cagatatctt tccatataag tagacctagg tatacttcat 89820
tcttttaaat agctccatag tattccatta tattgctatg tcataattaa aaataaatca 89880
atccttttatt ttttatatat gtttttttgag acggagtctc actctgtcgc ccagggtgga 89940
gtgcagtggc gcaatctcag ctactgcaa cctctgcctg ccagattcaa gtgattctcc 90000
tgcctcaacc tctgagtag ctgggactac aggcattgcac catcatgccc agctaatttt 90060
tatgttttta gtagagatgg ggtttcgcca tgttagctag gctggctctca aactcctgac 90120
ctcaagtgat ccacctgcct cggctgggat tacagggggt agccaccatg cctgccccct 90180
attagctttt taatctcctt ccagatgttt ggttttataa aacctccat 90240
gcatgtgaat ctgtgcacat gactacttcc acagatgagc tcctagaagt agaatacagc 90300
ttgattggag gtgacatata ttcttttaaat cctcattaca accctatgaa atagggtgta 90360
tttccccac ttttcaaaaa gaggcaatag agtatacaca tagcttcata acttcacctg 90420
taaagtaagg ggctgaacta agcttcacac ccagggtccag ctgagcccaa aacacgtatt 90480
ttttccacca tgagaccag attcacatgc agcaggggag acagaaggat tcagcagcag 90540
tgggcagtgg ggccaagcaa agggccctgg agccaatgta ccattgcagg aggcactggg 90600
attggagcct ggggacattt gtgaaaccac agcccagaga cttcacagtc tgggtgctgt 90660
ctccaatgtg gctcagttag ggcttctgga gttctcatct ataacagaac cataacgctt 90720
cctctatata agtgtctttc aaacttttgt tttgttgttt tttgagacag agtctcactc 90780
tgtcaccacg gccagagtgc agaggtgtga tcttgggtca ttgcaacctt cacctcctgg 90840
gttcaagtga ttctcctgcc ttagcctccc aagttagctg gattacaggt gtgtgccacc 90900
aggcctggct aacttttgta tttttagtgg agacgggatt tcaccatggt agccaggctg 90960
atctcaaaact cctgacctcg agtgatccac cggcctcggc ctctgaagt tctaggatta 91020
caggtgtgag ccactgtgac tatcacatg tataaaacta aaacagaagt gtcataaaat 91140
tatttgctt gtgacacagg gcaatgtatt gtaattttt cccttacata atttaaaaaa 91200
aataattcta ttagetaatt ctgtagttaa tctgggtaaa gactatcttt tttttttttt 91260
aaatcccaa tttgaaaatt tgttgcccg gctggagtgc aatgggtgtga tctcggtc 91320
ttaagatgga gtttcgctct gttcaagcaa ttctcctgcc ttagcctccc aagtagctgg 91380
ccgcaacctc atgaccacc tcttgaactc ccaacctcag gtgatctgcc tgcctcccaa 91500
gattacaggg gtaaggctgg tctatgcgt tcttggccct aagactatct ttatctccct 91560
agtgcaggga tcatatgcgt aagatgaccg gccaaattcc tcattctgat tcaagttcct 91620
agggttggtga acatgtgaaa ccctgctcac tcagccagtt cagtcacact ccacggccca 91680
tcctgagctg gtcccatttc cctgctcac cctcccatgg ctcccttctt tgggcgaaag 91740
ggccaaactc agtctcgtct ctcaacttga tgcgagcaca atataatacc cttcacgttg 91800
ctctgctcta caaaaatgga attttttttt cccacacat atttaaggag agccttgctc 91860
gcttgatcat taaaatgggt aaatttttaa atattctgt cattcttttt ggaagcact 91920
actttccaag tactgcctt catccttata ttactctttt tttctatgtt gtttaattag 91980
attatgttat aagctgcttt tttttttttt tttttttgac accatctttg ctcattgcaa 92040
cctatggttc caggttcaaa ctattctcct gcctcagcct cccgagcagc tgggattatg 92100
cctcgcctc accacatcag ttaacttttg tacttttagt agagatgggg gcccgcctg 92160
ggcatgtgcc ttggtctgaa agcctggcct cagggtgact gcccgcctg gctcccaaa 92220
ttggctaggc tacaggtttg agccaccagt cccagccagt tcaagctgtt ttctaacc 92280
gtgctaggat gctccgtgac attttccacc ttctagatta gcattttcac tgtgctatcc 92340
actttcagag ctttaatgta tacagcactg gagagactgt tcaatgactt acagatgcta 92400
atttgctgtg gatgcttgaa tgaggactaa ttccacaagt cggattaga ttatttgta 92460
agaggcaaga cagggactct cataatgaat ctttggataa ggagggctct ctgtacaacc 92520
atcttttctg agcctttctc tttctgcct ggagttcatc atccagaat tgtagcctct gtcttgaaa 92580
ttccccactc agcacttgat tttctgcct cgaagctgtg ctttgccagt ctttgccaga 92640
gccagccagc agcacttgat cttagttcat totcaagttt cttgccaaga tttggaaaca 92700
ggaggggaact ttagtgtttg aatgattgag aacttctgaa attcaatatt ttggggaaaa 92760
acaaaaatag gcatatgtat gtattgttac tttctctaag ctggaaagat gattgatact 92820
aactgtgttt aaaaaagggt aacatctttt cctccatgct tctctttacc atttgaaatt 92880
agtaactcac ctaggattaa ttgcttcagc aggaataat gtgcactttt caaagatacc 92940
ctggaagttt ttccacttat agcacttttg gaagctgagg aaaaacctg cagggcagac 93000
tatcttacca ctgtaatccc agcacttttg gcaaacatgg cagggcagatc acctaaggtc 93060
ggactcacgc aaccagcctg gccaacatgg catgcctgtt atcccagcta cttgggaggc 93120
aggagttcga cgtgggtgcca gcagaggttg cagggagtgt agattgtgcc actgactcc 93180
attagccagg aaccaggag actctgtctc aagaaacaaa atataaccta 93300
gaatcacttg caagagcaaa caggaatata ggcaaaagct aagcaacaca ctcaagta 93360
agcctgggtg acgattaaga attaccaata acgtaattca gaaaatggaa gcatatttta 93420
ctaaagccat ttttgtaatt tacactacag aactagataa aaaattaaag tgtacttaa 93480
aatttgattt tcttaccgtg gaaaaatgtt ttattttctc aaattaaata gaagttactg 93540

```

FIG. 6X

caataaaciaa	ttctgtgttg	cagattaacc	aattattttt	ctcctcatag	tgtttttaaa	93600
attatcaaaa	caacatatat	gcatagtata	taaaacataa	tattgacttc	ctatcatagg	93660
gtattaggat	tcagactttt	tttttaactt	ttgcttcaca	atgcaatgta	ctttccccc	93720
tctcctctoc	taatttccca	atatgtatat	ttttaaaaac	taattttgtt	tttgaactgg	93780
agtgcagtgg	tgcatctctg	gctcactgca	agctctgtct	cctgggttca	agtgattctc	93840
ctgcttcagc	cttgagagta	gctgggacta	taggcacatg	ccaccacacc	cggctaattt	93900
ttgtattttt	agtggagaca	ggctttcacc	atgtttggcca	ggctgggtctc	gaactcctga	93960
cctcaggtga	tctgcccacc	tcagcctccc	aaagtgtctg	gattacaggc	gtgagccacc	94020
atgcccgggc	taaaaattaa	attaacattc	atattattca	acaactgtgt	aaatattgtt	94080
cactgtagtg	gacctcatt	gcatttcctt	tcttgacatc	tttttgtttt	cggtagcta	94140
gtaattatct	tttttgtttc	catttgctta	gctttctagg	ttctatctgc	tatttgtcac	94200
catactctcc	aacagaactt	taaaactcct	ctcgtaccac	ttgggtact	gacttcttgg	94260
cagcatcctc	gatcctgctc	cacagggcct	ggattcatct	ccaagccgc	agctctacag	94320
ctgcttccaa	ccatcatttt	ggaaattctc	ttcccttctt	ctccgttcca	tgggtcctct	94380
gtcttccctg	ttcgtatatt	tgtgatgtct	tctagaaact	tcttgagaaa	ggatgcacag	94440
gcagaaaatt	ttttgagact	atgttttatg	aaatgtcctt	attttacctt	ctcagttgat	94500
tgacagtttg	gacataaatt	cccttagaa	tgttacaggc	atttctcctt	ttttgtttag	94560
ttcccagtaa	tacttttaag	aagtcttaag	ttattctgtc	ttgatccttt	tatctcccca	94620
ccgtcaccca	gocacaacca	aagctttttg	catctcctct	ctatcccat	aaatttctct	94680
atgggtgtgt	ttgatattga	acttagaaaa	acgttggttt	tactgaagta	taacatacag	94740
aagagcacia	atcattttac	aaaatgaaca	aacattttgt	gtaactaata	cctagattaa	94800
gaaacagtgc	taccaagagc	cactaacctc	tctcgtgag	aactgctatt	gtaatttcca	94860
gtaccataga	tcagattgcc	tgtttttgaa	tttttataga	aatgaaatca	ttgtaaaatg	94920
tgtatttttt	aaaaaaaaatg	tactcttttg	ctcctgggtc	ctttcattca	ccattaattt	94980
tgtctgattc	acccacgtcg	ctgcatgtgg	tggcaattca	ttcattcttg	ttcatatata	95040
tatatatata	tatatatata	tatatatata	tatatataaa	attgatgtat	ccaatgttaa	95100
tgaggatgga	cttgtgacta	tttccattct	gggatacta	gagatagggc	tgtcataaaa	95160
gtttctgtac	acgccctctg	ttgaacagat	tgagtctctg	tggacggcat	aagacatttt	95220
tcattttcaa	tctgaattct	tccttcagtt	tggtgaaaat	tgctggaatt	aattctttctg	95280
tgatttctcc	cttcttctct	tttttaaaat	ttatttttta	acacaacatc	aagtttctct	95340
tatcatctat	aatacagtta	tacccaaact	ttctaagacc	aaacagacag	tccctgccc	95400
agagcaggaa	attccaatga	gcccctaag	acacacaaag	gtgaatgtgg	aagatcatag	95460
ttccagctgc	aggtcacaag	tcttccattc	aaacactcca	tgcttttcat	ttctgtttgt	95520
taaagaaagc	gtcttacagg	acgttggtga	aaataatttc	atcccagaca	cgggtttct	95580
tcaataatag	acagctccat	gaaatctgtg	tttccatccg	actgacagga	atacaaagta	95640
atttttattg	ttttattttta	atttttttgt	ggtatagaga	agtaaaacta	tcagtcagat	95700
tcttttagta	ataaagaaaa	ggaggggaaa	gaaagcattt	gggctttgct	ggatgctggg	95760
ttctactgtg	ctgaggggat	gacttcaata	gttaaatcac	cctgacacca	ctgcagtaac	95820
tagtactagc	aattctttct	ttctttctct	cttcttctct	ttctttctct	ctttttctct	95880
ttctttctct	cctttctttc	tttctttctc	ttctttctct	ttctttctct	tttctttctc	95940
tttcttctct	ttctttctct	ctttctttct	ctttcttctc	tttctttctc	tctctttctc	96000
tctctctctc	tttttctttc	ttctttctct	tctttcttct	tttctttctc	tttctttctc	96060
cttctctctc	tttctttctc	tctttttctc	tctttcttct	tttctttctc	tttctttctc	96120
ttcttctctc	tttctttctc	tctttttctc	tctttcttct	tttctttctc	tttctttctc	96180
tttctctctc	tctctctctc	tctttttctc	ttctttttct	tttctttctc	tttctttctc	96240
acacccccat	ggacataaaa	atggcccaaa	ggtgttttgt	tttgttttgt	tttttgagat	96300
ggagtctcgc	tctgtcaccc	aggctggagt	gcaacggcac	gatctcggct	cactgcaacc	96360
tccacctccc	gggttcaaga	gattctcctg	cctcagcctc	cctagtagct	gggattacag	96420
gtgctgcca	ccatgcccag	ctaatttttg	tatttttagt	agagatgcgg	tttcaccatg	96480
ttggcctgga	tggctcccaa	ttcctgacct	taagtgatoc	gcccgcctca	gcctcccaaa	96540
gtgctgggat	tacaggcgta	agccactgcg	cccagccagc	ccagaagttt	tttactgaag	96600
atcaattctc	cccctgcccg	cctccgctga	aaaggtacaa	aatgaacatt	ttgttttgag	96660
atggcagctc	catcaggcat	tccaattcac	ccagccactt	attctcacag	aggtgagggg	96720
aacaggcatt	aggttttatt	agtcatgttg	tattttgtaac	cagatgtggc	ctcggcagct	96780
tatttgaaag	ccattgatcc	tttgaacacg	tgtagagaag	catggctgtc	cttactgac	96840
tgtccatata	tgagcatatt	cagctaccat	ggaaactacg	aaggaaaggaa	aaataatttt	96900
actccaaaat	tcattttactg	ggagttttaa	gtgccctttc	ttccacagag	cccagagta	96960
gtgctaattg	gctgggggca	gctgtatttt	ccagcatgag	ctcccatcct	ctgaggggtc	97020
tgaaaaggat	tggctcctgga	gtcttcatga	aaggaaatgag	gtggaacatg	tgtagcccca	97080
aacctgatag	tacggggagt	ggtgggggtg	gcagggcaat	gttcaccaca	gtgggtggagg	97140
atcacttagg	ggtaggctga	agtagctgct	gcaacaggag	gaagagctca	tggcagctct	97200
ggaaaaggct	ctaacttgat	cccagagtat	tgggttccgt	ccttcttttt	cttttctct	97260
ggctgcttga	gatcttcttg	atttcacgtt	gagctgtgtg	cgatttgcaat	caacttatta	97320
aaggacttct	cagcagccat	gtctgtagcc	tgccttgtgg	aaaactgggt	gaaagcacc	97380
tgctgcttct	gcattagagt	gatggtcaat	ctctcctaac	tggtagaaat	gatttctctg	97440

FIG. 6Y

atctgttttca	cccagacccat	ccacgtcttaa	tgtggtgaga	gtcttgtcct	ctgggtgggtc	97500
cagatgaggc	atggttgaag	tctgcttttag	aagcttatca	gctatagggg	cattgattcc	97560
ataatatgag	tcttcaacat	tttgatcagc	aaggggatca	tccagatctg	taggcttctt	97620
ctgtctgtag	ggacgctcct	cttttctctg	acactctcct	ttcacctagc	aggagcaaat	97680
gtgaggctga	ttcctttgat	agtagggtag	ggccacaggc	agtttgagca	gcacgacact	97740
gggggatgtg	tctttcccca	gcatgctaata	tagacgtgtt	ccatcagagt	tacagatctc	97800
tctccatatt	ctgtgtgtag	aaccctcggt	tgacatctga	ctttggcaca	ttacttttcaa	97860
aagacaatgc	tgtgtcatga	acctggatgt	gctggccaca	ctctacgtct	aagaggcagg	97920
tctgacattc	tccaattttac	tgcaaattttg	gcacacttta	gtctttttttt	ttttttttttt	97980
tgagatggag	ttttcgctct	tgttgcccaa	gctggagtgc	aatggcgcgca	tcttgggtcca	98040
tcacaacctc	tgccctccgg	gttcaagcag	ttctcctgcc	tcagcctcct	gagtagctgg	98100
gattacaggc	acctgccacc	acgcccggct	aattttgtat	tttttagtaga	gacagggttt	98160
ctccatgttg	gtcaggctgg	tctcgaactc	ccgacctcag	gtgatccgcc	tgccctcagcc	98220
tcccaaagtg	ctgggattac	aggcgtgagc	cactgtgcct	ggcctagtct	tctttaaaaa	98280
agcatgtgga	ccccagggca	ccagtgaaac	actgggaatg	gcttggcaca	gagactgcac	98340
tccttcttgt	atgttttttt	ctctttttgg	tgtgtgtgtg	tgtgtgtttc	ttttattttc	98400
tgatacaaac	acataaatgg	atcaaaaaat	atgttcatct	agaaaaactgg	acgtcatcca	98460
aaaatgaaaa	acaagtttca	atgaatttag	atttcctagc	attttactcc	taaccctaag	98520
ggttaaattt	attgtccact	tacatgccc	tgtttctgac	ccaagctaag	gggctggaaa	98580
acgaaactca	gagctagtgt	gtgggtggcac	atgcctgttaa	tcccagttac	ttgggaggct	98640
gaggcaggag	gatcaattga	gcccaggagt	tcaaatccaa	catgggcaac	gtagcgagac	98700
tccatctcta	aaatttaaaa	tcagaacaat	ctcatgtaaa	tatgggaagt	cttagcattg	98760
ataaaacctc	agattttcctg	gaagtaagtg	ggaagcctct	aatcctacct	ggaatagtct	98820
tttctggggg	atttttcagc	acaagtctaa	atctcacaaa	gcaccttcaa	aaactgggct	98880
acgcagtatc	acaggcatgg	cagtaggtcc	aaaggctgga	ttcagggggc	atgtaaataa	98940
caggaaaagc	aatcaagga	ccagatgctg	agattttccc	ttgagttcca	catttgggag	99000
aacaaggagt	tgaccocctaa	gtagtcttct	gcttcttggg	aaatggttgc	tcagctacat	99060
cttgtgcttc	agctaccttt	tgtttgaaga	actttgtgtt	ctgggtactc	tcttggcccc	99120
gtgttgggta	gaaggaagtg	gtatctcaat	gccaccatg	ggtgtatttt	gtataaccag	99180
agtgcacaaa	gttcttgcac	gacttttagga	agcatggctt	tgttgaaatg	atcctccagg	99240
gtggggggcac	tgaaatctct	tttgtatatt	tctcatattt	gcccctgaatg	gctttgctgg	99300
taatgacctt	goccatatgc	tgaagctcag	cttgcctgct	ttcctcagcc	agcttccgca	99360
gggtctcaat	ttctgtcttc	tccttctcaa	gctcttcttc	ctcgtctctg	ctcccttgtt	99420
tgtttttagct	tctgaacttt	ccatgcctcc	tgtctcctct	gactctctct	ttggtgttga	99480
gcgcatccag	agtagtgccg	ccccgcctgc	tctccgcagg	ctcttccatg	gtctcctaca	99540
gtctggaggg	ggcaccatgc	ctcctcaggg	tgcccttttg	ctcctgctcc	agctccttct	99600
ggttcaatgc	ttcagccctca	ggttctcga	ctgtcactca	gccccttctt	cttcccagtg	99660
agggcctgca	tcaggogagg	ctccgtctca	tctcactgt	ctgtggactc	tccatactca	99720
gatctgctct	gagctcccca	ggcgccctct	tctcaccgcc	tcccctgcca	cccctgtgcc	99780
tcccacactc	ctgtctctct	tctgtactc	cctgacacag	ggtgctgcac	tgccacccca	99840
tctcctcatc	ctcggtttct	tctcttctct	cttcaactgac	atccgctcat	tccgggcgct	99900
aggcacctgc	ttctcttctg	aagctgcctg	cttctatcac	tccaggtctc	actgttttcc	99960
aatgcccggc	aatctctctt	cctctcgtca	ctcacctggg	cctgaaaatg	ccacagcctg	100020
gctggctggc	tgagccctcc	tctgttctct	caggctctgc	ttcctgttcc	ttggattttc	100080
caatgaatga	aaattcctca	tccgcctcat	caggagactc	cacaggggca	cagctgggcc	100140
ttcttctgga	cacacaacgt	tggaccttgg	accttcaact	tctctgtgga	agtctcccat	100200
ttctcactgt	gatgcaggac	ggccccagtg	cagagtcaat	gagcgactgc	ttcatgagtg	100260
cccttgggac	tgacaagttg	atgggtggcg	actcccaaaa	ctgaaagatt	ccaaactgaa	100320
cacctacaat	gtcaatggac	agaaaaatct	ctttccgcc	aggtgcacag	ggcactgcta	100380
catagctgat	gcttgacttt	aatcattcag	ctatgtgggt	ctatgtgggt	tttctccaaa	100440
gcacattttg	cacagatggg	aagtccacac	acatcctcca	ggctctgcct	gttccagggt	100500
tttttttttt	tttttttttt	tttttaagac	agaggctcac	tctgttgccc	aggctagagt	100560
gcagtggcgc	gatctcagct	cactgcaacc	tccgcctccc	aggttcaagc	gatttttcatg	100620
cctcagcctc	cagagtagct	gggattacag	gtgtgcacca	ccacgcctgg	ctaattttttg	100680
tatttttagt	agagataggg	tttcacctag	ttggccaggc	tggtctcaaa	ctcccaacct	100740
cagttgatct	gcccactcca	gcctcccaaa	gtgctgggat	ggacaggtgt	gagccactgc	100800
acccggcctg	ttccagggtg	taaaacccag	agaggtcacc	atcttgagag	cgtctagggt	100860
gggaagtggg	actctccgag	tcttgggtgt	ttccctgtga	aaggaggaga	acttacatgt	100920
cacccacctg	atcaaatcag	gcccattccag	gagagtactc	ctgttgatta	atttaaggac	100980
ttggaacttc	acatcaacca	aatcccttca	gggcagcacc	tgaactagct	ttgtttggat	101040
accagggaga	gggtgtgtct	gattttcaact	agggcaggga	tgctaaaaga	ttctggggcc	101100
tgaagcccca	actgcataat	aagtctgtca	aggtctctaa	aaatgtacac	ccatgattttc	101160
tgattttatt	ccctacctta	ttgagagttt	acagtcaaac	aggaatgccc	aaaactccag	101220
cctctataaa	acgaactgaa	attagcagtt	tttccctcaa	tctggaatca	aaataattca	101280
ggcataaagg	gtctttccca	tggacaacag	caatagcatc	cttaaagcaa	ctctgcttat	101340

FIG. 6Z

attgtccttg	gtattgagat	caaacctcca	ttcagagcct	tactgggtctg	agatttttctt	101400
tctggggatg	ggcatctgga	atgggtgcac	tcaactctca	gctagatgtg	tctgcaccca	101460
cacctgcagg	tgactgccat	gtgggcagg	tacccaccct	ggcaggctcct	agcgatgtct	101520
ctctgccttg	gattgaacat	gcaagtcaga	ggttctgaac	caaccactcc	tcacctcaga	101580
atgtccactt	ctgccccaaa	agtgagatag	tgggagcctt	ccagtgatcc	attggccttc	101640
atctctgttt	cctagccaca	gttcctcaag	ccctaggaac	ggccagacca	ataaggggtat	101700
cttgcttttg	taatgagatg	actaatggct	ggggacccct	aagtagcttc	aggatggagg	101760
ctggcaccag	aaagaacaag	gcaagattgg	agagttagaa	tttcagtctc	actcccccaa	101820
cctccgggga	gggaagaggg	gcggaagggt	gagttgatca	gcaataggca	atgatgtagt	101880
ccatcatgcc	tatgtaatga	cgcttcocata	aaaccctcaa	aggactgggt	tcgcagagct	101940
tccagacagc	tgaaaacgtg	gaggttcctg	gaacgtgggt	cccctgaaaa	gggcatggaa	102000
gctctgcacc	cttcccccac	acctggccct	atgcatcttt	cccatctgtt	cctctgtatc	102060
cactataata	aataggtcaa	cataagtaaa	atgttttctt	gagctctgta	agctgctctg	102120
tcaaataaat	cgaacctgag	gagaaggagg	tgggaacgcc	tgattttag	ctgggtgggtc	102180
agaagaatag	gtaatcactt	aaagattttac	ctccattttt	attcctgagc	tttctctgca	102240
actgcagggc	ccaatccagg	acaggcagag	aactggcgct	tactgtgctc	tggtggaatt	102300
caggtaagtc	aggaggcgcc	tcgatgtaga	aacgtgttcc	tctgcactcc	tggtctccaa	102360
tcttttatat	agcctctgat	cttggttttag	gttgcaatat	cttctctctt	aaaaaaacta	102420
ttttttttct	tatgttccct	gtcatgtctt	gtttcagttc	tttttcttct	gtttgcattg	102480
atttccattt	cagctgggca	gctttcccca	catgcatggg	gatccttggc	tacctagtgc	102540
gatttgagag	cgaggcattt	aaaatgctga	tggatgtgag	gctgaggatg	gaggattgct	102600
tgagccaggga	gttcaaggtc	agcctggggc	atacagttag	accctatctc	aaaacaaaaac	102660
gacaataaca	aatgctaact	ctgtgtgagg	gtgtgtcac	tgggtgatga	attagagtgc	102720
cggctgctct	attgagaata	actgaatatt	attattatta	atatattaat	aatataata	102780
ttattctgtt	attcatataa	atctggcagc	atagttttgt	cagaaaggaa	tcctccaacc	102840
tgggccccat	gtaatagaag	aggttgacag	atctcagcag	tcacttgaag	aattctactc	102900
acttctgtt	tttctgcaaa	agaatccatc	ccattctcag	cagtgcacag	tattcctgag	102960
tctagagctt	cgctgtccaa	tatgtcagcc	actagccata	tgtggctatt	taaatacaaaa	103020
ttaaaactaa	acttcatttc	ctcagtcaca	ctggccatat	ttcatgtatt	tttgtttgtt	103080
tgtgggtttt	tcttgagaca	aggctcttact	ctgtatccca	ggctggagtg	cagtggtgca	103140
atcatggatc	actgtagcct	caacctcctg	ggctcaagag	atcctcctgc	ctcagcttca	103200
acttctgag	tagctaggac	tgcaagtgtg	tgccaccatg	cccagcaaat	ttttgtgttt	103260
tttatagaaa	cgggttttca	acatgttgcc	caagctggtc	ttgaactcct	gggctcaagc	103320
gaaccaccca	cctcggcctc	ccaaagtgtt	gggatgacag	gtatgagcca	ccacgtgcag	103380
ccacactggc	tacatttcag	gtggctattg	agccactagt	tgttggaaca	tgcagatata	103440
aagcacttcc	atcatcacgg	aaagtctctat	ggcacactgc	tggagactaa	acctcacgtt	103500
ttgtttgttt	gttttgagac	ggagtcttgc	tctgttgcca	ggctggagt	cagtacgtg	103560
atctcagccc	actgtaatct	ctgcctcccg	ggttcaagca	attccccctg	ctcagcctcc	103620
cgagtagcgt	ggactacagg	tgtgcacgcg	cacgcctggc	taattttttg	tatttttagta	103680
gagacggggt	ttcaccatgt	tggccaggat	gggtgtggtc	tcctgacctc	gtgattgtcc	103740
tgccttggcc	tcccaaaatg	ctgggattac	aggcgtgagc	cactgagccc	ggccaacctc	103800
acgttttata	cttggggaga	agtgggttcc	taactacact	gttgaggagg	gaatctggaa	103860
gtgtgatttt	cctctttttt	tagagactgg	gtcttgctct	gttgctcaag	ctatagttca	103920
tggaacaat	taaagctcac	tgctgcctta	acctaactgg	ctcaagtggg	gctcccagtt	103980
cagccttctg	agtaactgga	actacaggcg	gggtgccacca	tgcccagcta	attttttgtat	104040
ttcttcttag	agatggggtc	ttgctatgtt	gtccagactt	gtcctgaact	cctggcctca	104100
actgatcctc	ctacctcagc	ctttcaaagt	gctgggatta	caggcataag	ccaccatgcc	104160
cagtccagtt	taattattct	ttatacaata	tttcattaat	tattgaattt	tcaatcctac	104220
cgtgaatcca	ccttttagggg	tacctgaagg	ctcccccttc	ttgaaacttg	actcttaact	104280
aacccccctc	aacacacaca	tttgtagggt	taggttttcat	gctgttaatt	accactgggtc	104340
catgtgtctc	ccatctttca	aaacattctt	tatccctatc	ctactccttc	agcattactg	104400
atgggttttt	agcaaggagc	agagataatg	tgtgtggccc	atgccaagcc	tgaagtcctc	104460
ctgagatgtt	attcacataa	ctcatgacaa	aggcaatggg	gaaaaagtgt	tctgctgctt	104520
agctttgtca	ggttttgtcc	aaggtttgct	tagttacagt	tttaagaaaa	ttttatcatc	104580
tctgattttct	ttatatccca	ttgttttatt	cttttcccaa	atattatttg	agaacttact	104640
acaggttaag	cactgctcca	gttttaagtt	ttctcacttt	accctcccat	ttcataaaaa	104700
atattgttgc	taaacatttt	cagtgaagtt	ttaataatta	tgtatgttgg	caaaacctca	104760
tgaacaaaac	acagggcaag	cttatttttca	actgactcaa	gattggtttc	ctctaccac	104820
agccttaagc	cgagtcaaga	gctgagccca	ttccatagat	gctaaacctc	agccaacctt	104880
aacctgtgaa	tatgagaaca	gatacgtgtt	gatacaaaac	actgagtttg	gggtgggtttg	104940
ctatagagca	ttatgtttgtc	tgtctaacac	catgggaaaa	gagtccttac	aaacaggact	105000
ttagattttt	ttttttttta	atacaaaagt	atggctaggg	acagtggctc	actttggggag	105060
gccaaaggctg	gtgggtcact	tgaagtcagg	agtttgagac	cagcctggcc	aatgtgggtga	105120
aaccccgctc	ctactaaaaa	tacaaaaatc	agccaggcgt	gggtggcacac	acttgtgatc	105180
ccagctgctt	gggaggctga	agcaggggag	attgcttgaa	cccggggaggc	agaggctgca	105240

FIG. 6A2

gtgagccaag	attgtgccaac	tggagtccag	cctgagcaac	agagtgagtg	agactctgtc	105300
tcaaaaaaag	atatgggtta	gtcaatatgt	ttaggagaaa	ataaaagtta	tcattctaca	105360
acataaaatg	ctatttttatt	gcttgttgca	ttttatctaa	tgggtgtttt	ctaagaaaat	105420
ttgcaatagg	aataccactg	tttcaggttt	taaaatgate	ataagcacct	gatagagttt	105480
ggctgtgtcc	tcacccaaat	ctcatcttga	attgtagttc	ccataatccc	cacgtgttgt	105540
gggagggacc	agtgggaggt	aattgaatca	tgggggtggg	tacctcatg	ctgttcttgt	105600
gatactgagt	gaattctcat	gagatctgac	ggttttataa	ggggctttcc	tgcttttgtc	105660
cggcactttc	ccttctgtgc	gccatgtaaa	gaaagacctt	tttggttccc	cttccaccac	105720
gattgtaagt	ttcctgaggg	ctccccagcc	atgctgaact	gtgagtcaat	taaacttctt	105780
tcctttataa	attacccagt	cttgggtata	tctttattaa	cagcacgaga	atggactaat	105840
acagcacctg	actaggaaac	taatattttc	ctttcatttg	aaaaggatat	ttcattagcg	105900
aacagtgtct	attacacaag	ttacatcaag	atctgtgtgc	ctctttccaa	aagataaatt	105960
acaagcattg	ttacaaaata	aaagagtatg	cggtttgcaa	aattcttatg	atgggagccc	106020
ttctctgccc	agaattatgc	ttgcttgcct	cttaatgctt	ccactaatta	tgatgagatg	106080
tcactcagaa	cctacagttt	ctgccttggg	ggacgtataa	gaatgtcaga	acacctctcc	106140
atgggtatcg	gtgcttgcag	agcttttctg	tgggttatgg	accaactcct	cagtatctgt	106200
tcctaagacc	aaatgaacca	cgctatcttg	gaagtgtctg	tcttggacag	taaaggacat	106260
tgtgcagaca	gctggaagcg	gtccctatta	acattgtccc	tgatagtga	taaaggagcg	106320
gtgtgagttc	ctttgggctg	ctttctttct	tgatgtactg	aaactttagt	ttcaatggaa	106380
tcaaaagaat	cagagacgct	gggtgcaatg	gctcacacct	gtaatctcaa	cactttggga	106440
ggccaagtag	gaggaactct	tgtgcccagg	agttcaacac	cagcctgggc	aacagagtga	106500
gaccccatct	ctacaaaaaa	taagaaaaat	agctggctat	gctgggtatac	acctgtgggc	106560
ccagctactc	aggtgctcgc	ttgggtccag	gaggtcaagg	gtgcagtgag	ccgtaatgta	106620
gccactgaac	tccagcctag	gtgacagagt	gagatgctgt	ctgaataaat	aaataaatac	106680
gaatgtctga	ccagattggg	gcagcatctc	tgtatttgac	agattctaaa	acaacaactt	106740
agtaataaac	tctatcactc	ttacagtaat	agtgatagtg	ttcagagtaa	taaacagatt	106800
ctcacgctgt	tgcccaggct	gagagcagta	cacaatcaca	gctcactgca	gctcttgggc	106860
tcaagtggtc	ctcctgcate	agcctcctga	gtagctggga	ctacaggtgc	agggccacct	106920
gtctgagtaa	tttttgtact	ttttgtgtgt	gtgtgtgtag	ggacagggct	tcactatgtt	106980
gcccgggcta	gtcttgaact	cctggcctca	acagaccctc	ctgcttcggc	ctcccaaagt	107040
actgggatta	cgggcatgag	ccactgtgcc	tggcacaaac	actaattggt	tgtttttttt	107100
tttttgagat	ggagtcttgc	tccatctcag	cctgcacgcc	aggctggaat	gcagtggcat	107160
gatctcgact	cactgcaacc	tccgcctctc	gggttcaagc	aattctcctg	cctcagcttc	107220
ccgagtacct	gggattgcag	gcgcccgcga	tcacgcctgg	ctaatttttg	tatttttagt	107280
agagacgggg	ttttgccatg	ttggccaggc	tggctcggaa	ctcctgacct	caagtaatcc	107340
gcctgcctca	gcctcccaaa	gtgctggggg	tacaggcatg	agccaccaca	cctggccaca	107400
aacactattt	tttaaagcat	gtgatgttag	attcttttat	aaattaatat	tcaaactcac	107460
tagaaagact	ctggaatatg	tgtatgtgtg	tgtactagtt	tttaaaatcc	tatattttcc	107520
ttaacattaa	attgaaactc	attacaaaaa	aaagggttaat	actagtgtct	tcatgactat	107580
caggagctat	gacatccttt	taggaagtca	tgtatgttca	tttgtccatt	tgttcattca	107640
tgtatgtaaa	agttacagaa	cactgacatt	gtgctagggg	ccaatctaaa	cactgggaac	107700
acaaagggtg	gtggctttca	*aggggctatc	taaagtccaa	agaggaaagc	agacaacgag	107760
aagctattac	cagtgtgagc	agtgtctaac	actgaatgga	atgagagtac	atatcctccc	107820
tgacatgggt	gggagggatg	tcaaaggaag	gctcttagac	atagaatcta	aatcgagtcc	107880
tcgtgtttgt	cgtacttctt	taatgtaggg	attctctctg	tgtaactacc	tatcattcat	107940
ttgcctcttt	gctcagttca	ctaccaccca	gaggaactgc	tcccatgccc	agggaccctc	108000
ggatgacaca	ctcgggccac	ctcctctttt	gcctgtgtgt	ctgcaatatc	taggtgagct	108060
tggctttggg	accatatctg	ttctgtcatt	cctgtctcaa	aacataagac	tcactcccaa	108120
gaggaaatth	ttgcatttga	aaattcaagt	tgtatgaaat	ataaatgttt	cctactttgt	108180
acgttcttta	aattcatgtg	tcatatatta	catttactaa	gaagtagaaa	tacatgtact	108240
ttctaaactg	agaaaactag	ctgggtgga	acaaaactga	ttctaaacac	atctgataga	108300
ttctaaaaag	tgaaggtagt	ttaaagtggc	acacctggc	acatgttcac	tttagattgc	108360
caggtaaac	agcccaacag	gtgttaggag	acagatgttc	accaaagtct	tagccctcag	108420
ggagaaaaca	ttaaaatata	caacatattt	cccccgagta	tcagcaactg	aagaaagcat	108480
tttaccatct	actatcatga	tttctaaaca	cagtttaaaa	aattttatcg	aatacctact	108540
ataatgcaag	cagtactagt	tatgggtgata	aaagataaat	aaacccctga	tgtataaact	108600
aagcacctta	ttctattatt	tcattggttaa	atcacattcta	aaactaatth	ttttcctccg	108660
caagtcttcc	ttctcttttg	ggtttaaaa	gctcatcact	gaactgaacc	aagtcctatc	108720
taggaactca	ctgagtatag	gggattgcca	agtcctgttg	actcttctgc	cctctgcagt	108780
ttcaaagctg	tcttcacttt	atcttggcac	cattttccgg	taggcctata	gaacctgtaa	108840
ccttaaatat	cataacataa	aaactaaact	tcttgcacac	gttttggoct	tttotaatcc	108900
attctcatta	aactgtctgt	aaagtgacca	tttaaacaca	aaagatgcac	gaaattattc	108960
aatgtcaccc	aggcctctag	gatgcagccc	aacactctag	cacagatcac	tcccttttct	109020
tgtctcattt	ttgttgcttc	tctatcatga	gcatttatgt	cccattgggt	cccataaacc	109080
actgcaatth	atttactttt	cttagagaca	gggtcttgct	ctgttgccca	ggctggagtg	109140

FIG. 6B2

cagtgggtg	atcatagttc	attgcagcct	caaactcctg	ggcttaagca	atcctcccac	109200
gtcagcctcc	tgagtagctg	ggaccacagc	catgtgccac	catgcctggc	tattttaatat	109260
tgtattttct	gtagagacgg	ggtcttgctc	tggtgcccag	actgggtctca	aacgatcctc	109320
ctgccttggc	ctccaaagtg	ctgggattcc	aggtgtgagc	cactgcacct	ggccaatcgc	109380
tgcaatttta	aaaatgcccc	aagcgtcctc	aggtattggt	gtccctctca	caagcccatc	109440
ccagactgct	cctccccaac	ccctgcccac	ggccctcaat	taattttctc	ctctcctttt	109500
tttatttcag	aaaattttaa	aaagtgtgaa	gattagtgc	ataaacacac	acatatcctt	109560
tagttatatt	caccagttat	taacattttg	ctacattttg	gttcacttgc	ttttcccat	109620
ccccaaatat	ttactttgct	gaatcatttg	agagtaagtt	gcagacatta	tgacacttta	109680
ctcttaaaat	tttcagcaag	tatctcctaa	aaataggaca	ctctcttaca	taaccacaag	109740
gatcatactt	aggaaattta	atattgaaat	actaaaattt	aatttgaaata	tagagttgat	109800
gctcataatt	ctcctcagtt	ggctgacttc	tattttatctt	tcaagactaa	gctctaggaa	109860
aatgacctcc	cttctcccca	cacccctctc	ctgtccacac	acagaataca	ctgggtatct	109920
ctcttcgata	cttttactac	ctttttgtat	acttctattg	aagcacttag	cacacactat	109980
catattgtct	attttctttt	ctgtcgtatc	tgagactcag	ctagacccat	tttaattctt	110040
ctatcacttc	atatactacc	cagcattcgt	tggtgactga	atggataaat	gaatgaatga	110100
atgcatgatg	agacattgaa	gattctcttc	ccactctctc	attgtaaactg	gtcatgtgtc	110160
tctaaacatt	ctgagcaata	tatcacgtgt	tctcaatttc	acctcttatt	tcaaactctg	110220
ctatggtacc	caggctctctg	tgggcttctt	ctaccttggtg	cggatgcaac	ctcacagcac	110280
ctgcttttgg	cctctgcccc	tagtttctgg	ccccagggct	acattggagc	tgtgacacag	110340
gagtcccatg	ggaaccactt	ggcactcaga	tatggacaat	ctggaaatgc	aggacagtta	110400
aggcctgtta	gcttgccctg	accactgagg	gacaggagct	catagaaaaa	atgcttgtct	110460
cattttttagc	ccagggtggc	caattctgag	atgcatgtta	aaaggttcct	cagaagctcc	110520
cacaggatca	agtagcagat	attcataatg	gttgccaatt	tgaaagggac	ccttgggttg	110580
gctttctctc	cttccggggg	gtcattcttc	tgtcttatca	cagtctattc	ccttgggtgca	110640
cattcccaaa	taaactccct	acctacctcc	aagttgtttg	tacaggcttt	gctttcggga	110700
gagccagac	taagacaatg	tggtaacgta	aaagactggt	ggcttgggag	ccagacagac	110760
ctgactttga	aaccaagttt	gctcattcac	tagccatgac	cttgggcaca	taatttaact	110820
tctctcagcc	tcactctctt	cactttataa	tgaagataat	actttatagg	agtatggtaa	110880
tgacttcata	ggggtatggt	aattagaaat	ttaccaaaata	tatatatgaa	tagaatatat	110940
acaacttctc	tgagtaatga	ttgactataa	taaaccacat	tgagtgtctg	tccagcttag	111000
gagccaacct	cactcttcca	tttctcttaa	gattcactat	ttgtcccagc	catgcccacc	111060
atcattgagc	gggagttcaa	ggagttggat	gctcagcctc	gctggcagct	gccgtacttg	111120
gaaattcgaa	atgagtccca	tgactatctt	catagagtgg	ccaagtttcc	agaaaacaga	111180
aatcgaaata	gatacagaga	tgtaaagcca	tatgatcaca	gtcgtgttaa	actgcagaat	111240
actgagaatg	attatattaa	tgccagctta	gttgacatag	aagaggcacg	aaggagtta	111300
atcttaacac	cgggtccact	tcctaacatg	tgtgtccatt	tctggcttac	gggttggcag	111360
cagaagacca	aagcagttgt	tgtgtctgac	cgcatttgtg	agaaagaatc	gggttaaagt	111420
gcgcagtact	ggccaacaga	tgaccaaaag	atgctgttta	aagaaacggg	attcaatgtg	111480
aagctctcttc	agaagatgtg	aagtcacatt	acacagtaca	tctactacga	ttagaaaata	111540
tcaatagtgg	tgaaaccaga	acaatatctc	acttgcatta	tacgacctgg	ccagattttg	111600
gagtccctga	atcaccagct	tcattttctc	atcttctgtt	gaaagtgaga	gaatctggct	111660
ccttgaaccc	tgaccatggg	cctgcagtga	tccattgtag	cgaaggcact	gggtgcacgg	111720
gcaccttctc	tctggttagac	gcttgtcttg	ttttgatggg	aaaaggagat	tatatataca	111780
ttaaacaagt	gttattgaac	atgagaaaaa	actgaattgg	tcttattcag	acccagatc	111840
aactgagatt	gtcatacatg	gctataatag	aaggagcaaa	atgtataaag	gtagattcta	111900
gtatacagaa	acgggtggaa	gaattttcta	aggaaaactt	agctcctgct	tttgatcatt	111960
caccgaacaa	aataatgact	gaaaaatata	atgggaacag	aattgggtcta	gaagaagaaa	112020
aactgacagg	tgaccgatgt	acagtaaatg	caagatacaa	tggaagagaa	cagtggagaat	112080
gctctacgga	aacatattct	agaggacaga	aaggccacca	cagctcagaa	ggtgcagcag	112140
atgaaacaga	ggctaaatga	gaacgaacaa	aaaagaaaaa	ggccaagata	gacacctaat	112200
attcatgact	tgagaatatt	ctggagctat	aaattttgaa	ccactgatgt	gcaaaacaag	112260
acctgaagcc	cactccagaa	actaaagtga	ggcttgctaa	ccttctagat	tgcttcacag	112320
ttgtttggtt	acaaagttaa	ctttacatac	agggatagag	gagcaccac	cagcagaaga	112380
ctttgcagaa	ccttacattg	gatgtgtcgt	tgtgtttttt	tttttttttt	tttttttttg	112440
agacggagtc	tctgtctctg	tgcccaggct	ggagtacagt	ggcgcatct	cggctcaggt	112500
caagctccgc	ctcctggggt	cacgcatttc	tctgtccctca	gcctccggag	tagctgggaa	112560
tacaggcgcc	cgccaccaag	cctggcta	tttttgtatt	tttagtagag	atgggggttc	112620
accgtgttcg	ccaggatggt	ctcgatctcc	tgacctcgtg	atccgcccgc	ctcgccctcc	112680
caaaatgctg	ggattacagg	cgtgagccac	cgcattggcc	tgtaaagtgt	ttttaatggg	112740
tgtatgaaac	gtagaaatat	gtaaaagaaa	taaattagga	gagattaatt	tgtgtgtgac	112800
tgccattcct	actgtatttt	tatacttttt	ggcagcatta	aatatttttt	ttaaagagtc	112860
aaaaaaattt	actacttgct	ccatcagttt	cctgggagtg	gttcattgtac	tcacaaattt	112920
actagatttt	gtgactatta	gcaaccacaa	ttctagctac	tgcatgtgact	attacactaa	112980
tatacagaat	aaacaatgcc	tataattatt	tttaaaaaga	atcatcctaa	atttacaaaa	113040

FIG. 6C2

agacaaaccg	catttccata	atatattgtc	taaatttcag	gaagaaattc	tcaacctttg	113100
aatgacagat	ttaagaaaaac	tagtttagat	atcaatatct	cattggaata	tgttgttttg	113160
tttataacctc	aggtttttcaa	agcttttgga	cctcaaaagt	agtccttatt	taaaaactgc	113220
tactcgtaac	catagtctcc	atcgtaaaa	aggaattgat	aaggattatt	atgcttgaaa	113280
tattaatctg	tatgggtctt	acaagatact	ccaggttgct	tatatgctta	gtgggaaatg	113340
agaattattc	aaaagaaaaa	ttctattttc	ccaatgggag	aagtgtccaa	aagtttcaaa	113400
gatgtcagaa	aaatcagctt	ttggaagctg	ctgccacaat	tgtcaataag	caggagatac	113460
cagtatgtct	tcaaagagag	aattcattga	aacaagtcac	tgaggctggg	cgtggtggct	113520
cacgcctgta	atcccaacac	tttgggaggg	caagatgggc	agatcacctg	agactgggag	113580
tttgagacca	gcctgaccaa	cacagtgaac	ccctgtctct	actaaaaaca	caaaaattag	113640
ccaggtgtgg	tgtgtgcaaa	ctgtaatccc	agctactcga	gagctgaggg	aggagaattg	113700
cttgagcccg	agaggtggag	gttgcagtg	gccgagatcc	tgccactgca	ctctagcctg	113760
ggcaacaaga	gagaaactct	gtttcaaaaa	agaaaacaaa	acaagtcatt	gatagtataa	113820
cgaagagata	tctgcatccc	atgtctactg	cagcactatt	ctcaatagcc	aagatatgga	113880
gtcaacctta	gtgtccaaca	acagatgaat	gaatgaagaa	aatgtgatat	atacacacta	113940
tggagtatta	tctagccata	aaaaagagtg	aaatcccac	gttgatggaa	tatagatgaa	114000
actggaggac	attatttttaa	gtgaaaaaag	ccaggaacag	aaagttaaac	agtgcattgt	114060
ctcactcata	tgcgaaagct	aaaaaaagtt	gatctcatag	aagtaaaaag	taggacagag	114120
gatactagag	gctgggacga	gagtgacaga	gagatttggt	aaaagataca	aaattatagc	114180
gagataagag	aaataagtct	tagtgttcga	cagcactgta	gaatgactat	agttaataat	114240
aatacaatat	atagtttcaa	atagctggaa	ggatattgca	cattctcaac	ataaagaaat	114300
gataaacata	tgagatgggtg	gatgtgcgaa	ttaccctgat	ctgataacta	ttaattatat	114360
gtatggaaat	ataattatgt	gctctcaaga	atatgtacaa	ttgggtatttg	tcaattttaa	114420
aaataaatct	aaaaactgta	tcattgaatc	cttaagatgc	taaagtccat	ttacttatat	114480
aacaaattaa	aaaattatct	cttatgctgt	ttttcaaaaa	tcatagcttt	tatgacttta	114540
cataaatata	tctaaaataa	taattgtatg	atatgttttt	gtagtcta	aaaatttgca	114600
ctgaattcca	attttttaag	ggtatctttt	tccatgtttt	catctttatt	tttatatggg	114660
aagttccta	tgaaataagg	tgctcctcag	ttctaggagt	taacccta	agtaataaat	114720
gtgatcctcc	tcaacgcgag	ttccagagct	aaaaagaatg	cctagtctat	gttcctttgc	114780
gtttttgttt	tattttatct	aaatgtctgt	ctacctgggt	cccttgatta	gggagcaagc	114840
ctccaagggg	caaaaccatg	tttcatgtct	ctgcggccca	gtgcctagca	cagagctctg	114900
tccatatactg	cactccaata	aatgttgacc	taagactcct	acacttacag	attcaccttg	114960
tagataaaag	ggctttggaa	gtcatcta	ccattccctt	aactctctat	cctacttcac	115020
caacaaccag	cttttgcaag	acacttccag	gggaagagtc	tatgccgaga	caaatgattt	115080
cattaaccat	cacaaagcta	attgttacct	gattcttaaa	cttggtccaa	ccttgccctt	115140
tttttagtctt	tgactgaata	gctctagttc	tcacctaaag	agttatatga	aatacagttc	115200
cagaaagaga	agcggatggt	aagaagagag	cgagacaggg	cacagaatag	acttgaacct	115260
catgtctatc	aattcgggtat	gtgttcatgt	ggtttctgac	tctagaacag	ttatgccagt	115320
gtccctgagg	ttcctgtgct	tggtccctc	atgttctcac	atgtctggca	tctctgtgtg	115380
atgcctgaga	aggatccatg	ctaaaattgt	aatgacatat	ataccta	tagcagcata	115440
caacttccaa	aaaccgagcc	tatgcaagag	ctattaaaaa	aaaaaggata	atgaagagaa	115500
caggatttga	gttgctgctt	cttggttttc	ccctggagcc	ttcccaggca	aatatggatc	115560
agaaagcttt	tcttgtcaat	tctaatttgt	ggtagtctag	aaacttaacc	cttgctactt	115620
tgatgcctg	atcttcatctt	tcaatggaaa	ggtaaaaaatg	ataaaaataa	acaatttctt	115680
agatacactg	tttcatgtaa	tttgatgcaa	ttcagtttat	attcacttgg	caaaagtga	115740
cagtgtgtaa	ttttaagaac	tagtgtctat	atcttacatc	tcattcttag	ccaaaagtgt	115800
ggagttaaaa	accatttgct	caccaagacc	tcagcagaaa	attttttaaa	aaaataactg	115860
aaatgaaaac	ataagtcatg	taaaaaaaga	tttttttttt	aagatgaaaa	aatgttcaac	115920
cttgctggct	ttagagaaat	aggcattaaa	atgtccgggc	tttttagcaat	aatcctagtt	115980
gttagtgaaa	caccaagtct	gtctctaaca	gccatgggct	atgaaacctt	cctttttcca	116040
aaaagacatt	ctgacagata	gaatcaagcc	attcaagtgt	ccccagata	ctgcaaatgt	116100
tgatcctcaa	aaccccagga	gctttctttc	cttattcccc	tagagcaata	gttttcaagt	116160
gtgatcctga	acttggttaga	aatgcaaat	cttgggcccc	accccagacc	cactgaatca	116220
gaaactctgg	gagtagggcc	gagaaatgag	tttttcacaa	gcctccaagg	gattctgatg	116280
cacggtaaaa	tttgaggacc	accaatgcag	atggattata	atcttcttga	gggcaaggac	116340
caaacttggt	gaaggttaac	cctggctcgt	gactcacagt	aggtgttcag	aatgtgttga	116400
atgaataaat	gtttctgtaca	cttttccaga	aagctctgaa	tctatagtta	cttttaattt	116460
ttaaaaatat	cttttgagga	cttctctaga	aataggtgag	tctgtttctt	acattgccaa	116520
atgtacctgg	gggtgggggt	gcgggtggag	gaaaaattgc	ccctgttgag	aagcactgcc	116580
ttagatcatt	ccttaccag	gtacgttagg	cactggcctc	actccaaggc	cagtgtctcc	116640
tgtgcttcta	gagtggttag	ggaagcacac	tatgggacaa	cctttcctca	ccattgacaa	116700
tggctattta	caagccatg	gcttatttta	cagggtgaac	tccaatccc	ggtaagatgg	116760
cccaggtttc	attgctgggt	tactagtttt	gcttccttgg	gcagtgaatt	taaataacct	116820
gtcaaaaagaa	tgaagtgatg	gaagccagac	tcaaaccaac	tgtgtactct	gtccacacct	116880
cttcagcaat	atggcatatt	gcaaagtagt	gttcagagat	gtgcgtgtag	taggctgcct	116940

FIG. 6D2

gctctaacac	atgagattaa	atttagatag	ccacataggg	aaatcagttt	ttaagaaagc	117000
ggatggaatt	cagctgcaaa	tagatggaca	cctggaattc	tgggaagttc	tagctgctgc	117060
tgctcaacta	aggcataact	gaactcaaga	tttacaaaaa	tgtattttcag	cccaagtctc	117120
tccataacta	ctaacaaggg	actgaggaga	agaattttata	ttaaaaggat	aaaaatatct	117180
acacttggaa	acagcagatt	gtgaaaggg	atgtgactga	caattattaa	acaatttaaga	117240
gtatgactaa	gatgaatatg	cattcattca	ccaaaatctc	atattcccaa	aaagcaggaa	117300
aggtagtaca	gtgagatgga	tgatgccttc	acatgactca	gatgtcacgt	gtttctcacc	117360
attgagaccc	ccaaggcacc	ccctcccagc	atttaccaga	atgtgtgtgt	aactattttac	117420
agtgtatttg	gtaattattt	gattgtttct	cttgtatcct	gtagcaatga	gggtagagat	117480
tatatccac	ctaccactgc	agctccagga	tccagcttca	caaacatttg	ttgaatgaat	117540
gaataagaaa	agaggacacc	cccaaagagg	ctgcaaggga	aaaagctaca	aagacagaag	117600
caccaggaaa	aagtagggtc	atgtaagtca	aagcaggaaa	aaagttccat	ggtgggggtg	117660
tcagcagtgt	ctaatagccac	gaaggcacia	agtaggataa	aggttaaaaa	tcagcctttg	117720
gttttggcaa	atatgaagct	tatcggtagc	cttagcgaga	acaattccat	cagggagcag	117780
aagctaactg	cagtgggttg	agtcatcaag	caggcataag	gaagtaggga	taccccat	117840
taagctactc	tttcaagaag	ctcaaatctg	aagggttagga	gaattaggtc	agtagctaga	117900
aggaaatgtg	gagtcgaggg	gctgtttttc	ctcccaagga	gtataaagg	gtaacgttgc	117960
atgaaaccac	ttcagacaaa	ggccgatatc	aatagagaag	ttaaaacgca	cgcctcaaga	118020
tttgggaagg	cttgggggtg	ggcttaaaga	ggtaggagca	tatttcctat	cctaggacag	118080
agaataaaga	agaaaggata	ggttcccatg	gagataaatt	tctaagtgtt	aaagaagagg	118140
ctcagaaaaa	tctagcatga	taggctcact	tttttctttt	tccatgaagg	agatggcaaa	118200
gtcaactgac	atgagaaagg	tgacaatact	gtaggggtga	agagcgatgg	acatttgaaa	118260
taacttctta	gaccagtaga	ggctggagtt	cataaatcag	aactggctac	aggttatata	118320
tgtttttttt	tttttctcca	acagcataag	ataacagagc	gaagtctgta	gaaatgaaag	118380
aagagtcaga	tgaggatagc	tggagctagt	gcaaggaggg	aagcaccacg	gtgggagcca	118440
ggtacccctt	ggattttataa	ttcatactga	attccaacaa	cagaagggct	ctaagcagga	118500
gagtgacaga	tttcagaaga	ctgagacaca	tttggtaaaa	aaaagtagga	ggaaaacctg	118560
attcttgaat	tagggcagcc	aatagacggc	agtattttca	gaaaggaggg	aatgggtcaac	118620
agtgaacttc	tagtctggag	ctcaggagga	agaggcaact	ctacctgatg	gtattaagat	118680
catggaggta	gctgagatca	cctagcttgt	gtgtgtcaaa	tgagaaaaga	agaaagaata	118740
ggagaagttc	cccaggaaca	cagacattaa	gtggggctgt	ggtgacaaca	caagaagaga	118800
ggcttgcaaa	ggagcctgag	cagctgtcat	gagagaggta	ggatggtgga	ctcggagaag	118860
aggcagaaga	tgttcttaaa	ggaaggacac	tgctgccaag	tagtcagcca	attggtgaca	118920
aagaaagacc	ctggttgcgag	aaaaaaaagtc	agtgaagtga	taggaacgat	gacagatgac	118980
actgggttga	agactgagga	gagagaagtg	taagagtggga	agcagagggc	agaccactct	119040
tctgagacac	tgaagaggca	tagttagaaa	taaaggggag	tcgccagaaa	ggaattttgtg	119100
gctaagcaag	aggttttctt	taagactgaa	atacataagc	atgattttaa	tgctgctggg	119160
atggagttca	agacacctga	agacagaaga	caaagcggat	catcaagata	gtggaattta	119220
ctgaaatgag	agaggaaaat	cccatccaca	ggaatgtcgag	acatgagggga	ggggccagaa	119280
ggacagtga	aacatcagca	actggtcccc	caacttctga	gtgaatgtgg	agatataatc	119340
aggtaaaggga	ctgcatcatc	tccctgggtta	atgatggagt	cagagaaaag	agtgtcttat	119400
acagaagtgt	tgatatactt	ggccggggcg	agtggctcac	gcctgtaatc	taagcacttt	119460
gggaggccaa	ggcaggcgga	tcacctgagg	tcaggagttc	atgactggcc	tggtcaacat	119520
ggcaaaaatc	cacctctact	aaaaacaaaa	gcctgtaatc	ccagctacta	gggagcctga	119580
ggcaggagaa	tcgcttgaac	ccaggaggca	gaggttgcag	tgagccaagg	tcgcaccat	119640
gtactccagc	ctgggcaaca	gagctagact	cagtctcaaa	aaaaaaaaaa	aaagatgtat	119700
ttattctcac	tgtataaatt	tctgtgtaag	aaatactctc	tcatatagaa	gtaaatttat	119760
atataaaaatt	atatagaacc	actataaaaat	actcaggttt	ataaaaattta	tatataaact	119820
tgttgacata	taaaattcca	tgtaaattgac	tataaaagtac	tottatatga	aaagtatatg	119880
aattaaattta	tatatcaact	tacttttata	ttacagttat	tttgttatac	agaagtttat	119940
atagtgacaa	taaatatttc	tcaagaacga	tttcacataa	tagaagtata	aattatccat	120000
ttccaatagt	gaaaaagaaa	agcagttcca	caccagtgac	agggctacga	atctaagagg	120060
tacaaagact	tcattcttag	agacactgag	gtcagggcat	ggccaacaca	tctgaagctg	120120
atagaatttg	cgctgggttg	gttggagacg	gtacgggtatt	actattacaa	tggcagacgc	120180
ttggccttga	taactagcca	atcaggggga	aagattcttg	tttcctctgt	tattatctga	120240
actagtgtgt	tcccaaaggg	ttaagatggt	ttatggaagg	cacaagatca	gcaaaccata	120300
aaggtagtagc	actaagaagg	aaggaagttag	accaagtgtt	aatggcgatg	ccatgtaaga	120360
gccaggtctg	cgatgtatgt	tctacatggg	ttgggggggt	aaaaaaatgt	cagcctccag	120420
agcacagggc	tttaagcctc	aagtactgtt	aacagtagag	tttactagtc	tacagcagga	120480
attacaacca	gtaattctaa	ggccaattac	tcaggcaagt	tttactagaa	caaggaagct	120540
ctgcttcgag	gtcaaatacga	tttctgcatt	tatagaagca	tctagatgtt	ctctgttcaa	120600
acaattgggt	aaaatcccca	cacattttat	ttctgacaga	gtgttcctta	tattgtcctg	120660
ccaggagtga	taacatttgt	tggtctattat	taataaaaaca	ttgctgtggc	tgggcgagct	120720
ggctcacacc	tgtaatcctg	gcactttggg	aggctgaggc	aggaggatca	cttaactcca	120780
ggagtttgac	agcagcctgg	gcaacatagc	aagatcccat	ctctctaaaa	aatttttaaaa	120840

FIG. 6E2

ttagctgggt	gtgggtggcag	acacctgtag	tcccagctcc	tcaggaagct	gaggtgggag	120900
gatcacttga	gcccagcag	gttgaggctg	cagcgtgctg	tgactgtgcc	actgcactcc	120960
agcctgcgca	acacactgag	agagactctg	tctcaaaaaa	atacatcaaa	taaaaattaa	121020
aagcccattt	ctttcttttg	gtacattaca	gccattgcact	tcaaaggcta	gcacaattat	121080
ttttctgcag	ttctatat	agattctagt	tagaagtaac	ctaggacctt	catgttagag	121140
gtgtctttgg	caaaactggt	atgtgagtga	aacgtttaat	caattgagga	taaagatgcc	121200
tcattgctaa	tgaagatgtg	gtttaaggat	tttatgcacc	cagttcattt	attaacaact	121260
tgtttaagct	ttattagctg	ggctctctact	ttataactgt	gttctttaat	ttacaagaca	121320
ataaaaaatta	aaatggtaaa	tgggaaacct	atcttgcttt	tcaataaata	atztatttta	121380
ataacttcgt	gggcatgggtg	gccaaaacat	tttagctgtg	aaaataat	caattcatat	121440
ttttttggaa	tcaatattaa	aagggtgatat	attctcaaat	gaaaagtggg	caaatgatca	121500
gttataggac	atgattaaga	aactaaccat	gagccacgtg	cagtggctca	tgctgtaat	121560
cccagcactc	tgggaggccg	cgggtgagcgg	attgcttgag	cccaggagtt	caagaccagg	121620
ctgggcaaca	tggcaaaaac	ccggctctac	taaaaatgca	aaaaaaaaaa	aaaaaaaaaa	121680
aatttagctg	ggttttgggtg	gcttatgcct	gcagtcccag	ctactcgga	ggctgactcg	121740
ggaggctgag	gcacaagaat	catttgaacc	caggaggcag	agggtgcaat	gagctgagaa	121800
tacaccactg	cactccagcc	tgggcaacag	agagagagag	actcagctct	aaaaaacaaa	121860
caaacaaaca	aacaaaccgc	tgccctgtgc	ttggagagat	ctgtttacct	ttaccactaa	121920
agactgttgg	aagtaaattt	tagaaggttt	ataataccta	aaagtaatca	cttctgtctt	121980
atgaaagggt	ctgctgagat	ttttctattg	tggccactag	tggcaatatt	ccagaagtca	122040
tatttaaaga	atatcttttag	tggattcagc	agtttttcaa	atatgtactt	ttatctctcc	122100
aacattcatg	attgcaattt	ttcaaatata	cctcatgata	taaacaactg	tactctatga	122160
tgccctcatg	tacagaaact	ggaggcagaa	agagaagttg	aatgtctaag	aatcggtaat	122220
tctaaaactc	aacatagacc	attcagcatt	agtggttcta	acaatcccac	tgcaaaatga	122280
gttgataatg	tgtaacactt	tagtgaacta	aagcataaag	aaccatgggtc	tcctaattgca	122340
gcaaatataa	acacatgata	gctacaatta	atgaagtaca	tagtcctggc	tgggcactat	122400
ggtacgtcct	ttacatagat	tatctcttaa	attattaacc	cgtttttaga	gatgagaaca	122460
ttcgggctca	ggaaggttat	gtaagttata	taaaaatcac	aaaataagag	acagagctaa	122520
gatttgaatc	caagtgtgac	caggttcata	tcaagcttcc	atTTTTgaat	ttatattaga	122580
ggtcaataac	tcacctttgt	ccttttaaaa	taatttttgg	ctctgtgacc	tacacaggca	122640
agctgttatt	tacaaacaac	ccacacatct	agatggtcac	tgtctcaccg	cccactttta	122700
ccatcaggac	tcctagttag	ctgtcaaggg	gaatgctata	atTTTTggagg	ttctaaatct	122760
gagggcttaa	gaaagaaaga	aattgtaaaa	agcaggcatt	actcaggggc	atagattgtc	122820
aggcagatct	gtcatgctta	taggtaacct	cccagggcca	aaaatatatg	tgcccaact	122880
gcctaaatat	ttcctgtcac	ttcataatac	tgctgaaat	cctgccaaat	tagaacttca	122940
tttgtgttgc	ttgtcaattt	ttaacgcata	agcaaatcac	ctggagatct	tgttaaaatg	123000
caaattctga	ttaggttagg	tctgggtctg	catgtctgat	atgcttccag	agggcactga	123060
tgctgtctgt	ccatggacca	cacttaaaga	agcaaaaaag	atgtctgata	tttactctct	123120
ggctgcctag	gagtgcttct	catttaagtg	agatctcttt	gtgcatcata	atgggaggga	123180
tgagctgaaa	agcagcaaat	taagagttag	ttaaagtgtct	acctcacttc	cctactatct	123240
gtaacaagca	ggtttgggca	ctgtggtcaa	ccagaaaatt	ctttccagga	ccacaaccct	123300
tgagattatg	ttgcaaagat	gcaaggacaa	cttagaaata	atttccagca	ctggtggcac	123360
tggatgtctg	tcagtgggtg	tgggtggcagg	gtcctattca	gactgtggtt	tacctgcctg	123420
gcccgttttg	ttatggggcca	ttttctgagt	accatggagc	atcgcccagc	tgacaagggc	123480
ttgtactcca	cccttgggtg	gcagaaggga	agcttggctg	ctactaagtt	tgggtgcaag	123540
taattgtggt	tttgccatta	atatttgata	cagtgaagtc	ctactttcct	cagggtgaaac	123600
tagaacttaa	ggggacacgc	tcaagttctc	attatacagt	actaagtttc	aaaaatcagc	123660
aattttatca	aacacatgct	ctacagcagt	ggtcggcaaa	ctttttctgt	aaggggccag	123720
agagtaaatg	tttttagagtt	tctgggccac	atatggtttc	tgttccagct	ataaactctg	123780
ccactgtagg	gcaaaagcaa	ccctccacaa	tacatacatg	aatagggtgtg	ttccaaaaaa	123840
actttatttg	tggaccctga	aatttgaatt	tcataaactt	ttcatgtgtc	atgaaatatt	123900
cttttgattt	tttcccaacc	ttttaaagat	gtaacaacca	tttttagcct	gtaggccata	123960
tagaaacagg	cagtgggctg	ggtttgctga	cccttgctct	gaagcaatga	tatctcgatc	124020
caattttatac	ccacaaaattt	ttctccttga	aaccatgcac	ttaatcttca	tctcttctta	124080
ccatgacaat	aagaagttat	tctatataac	aaagagattg	taccacacca	agccagcatt	124140
tagatcatgt	catttgcttc	ctcaaaattt	ttggtcttat	aaaaatcaat	taaaggacct	124200
taaaaggtaa	gcagtgatga	aatatttgaa	ataattggct	aattaaacat	cacctaaata	124260
gaaactgtga	taagaaccac	aaatgcgaaa	aggaatcatg	tagtaactaa	tgtggaggat	124320
atcttggttt	agagatttga	tgaacacgag	ttttgattta	aaaaaatttg	tgcaatactc	124380
actgcttttg	tggggagcct	gctatgcaag	ttggtagaaa	aatttatcct	aaagtacag	124440
ttctctacca	ctctggattt	tctcgagcta	actaccattc	caaactattt	taggcacagt	124500
tactagtttc	agaattcagg	caaattgccc	tggtatttag	actgttcttt	ctgtggtcac	124560
aagtcaaaact	actgtgggtga	ataaaattag	atgatttctt	tagtctttcc	tttttcagcc	124620
cctgtagtca	atttccagtg	ctccattcaa	agaaaaacca	aaaatgtcca	gaatataacc	124680
ttatttttaa	acttggttaac	cactgatttc	acttggttaac	caaatTTTTT	TTTTTTTTTT	124740

FIG. 6F2

tttgagaatg	aatctcactc	tgtcaccagg	ctggagtgca	gtggcatgat	cttggttcac	124800
tgcaacctcc	gcctcctggg	tactggttca	agcaattctc	ctgcctcagt	ctcccagagta	124860
gctgggatta	caggtgtgca	ccccacacc	cagctaattt	ttttgtactt	ttagtagaga	124920
tggggtttca	ccatgttggc	cgggctagtc	ttaaactcct	gacctcgtga	tccgcccgc	124980
tcggcctccc	aaagtgtggt	gattgcaggc	atgaaccact	gcgcccagcc	tgtaaaccac	125040
atttctaata	acacacactt	gaggccaggt	aaatgcctgc	tgaaaagagg	gtgctggttg	125100
tgaggcaact	gaggggctaa	catactgata	gctgctgaaa	tcttctacag	ctctttcttg	125160
ttagaacact	ccatcacggc	tcccaggccc	acaccacatg	aaggaaacttc	tagctctctt	125220
gcttgctctt	taccocaaatg	tagttagcaa	gtcctgggaa	ctaaacagca	ttgacacact	125280
tgaagaagac	aattaggcaa	atcccaactg	ctgtgctcct	gcagctaaag	atgaagactc	125340
gtccattggg	cagttgatta	attgtaccta	gaaaattaat	ttcaatggtc	ccatgacaac	125400
atacgggcag	tgaagctcta	gtgttcccc	tgggtggaat	cttccaggat	gtatagtctc	125460
ccataccagc	tcactctccc	atTTTTccag	attctggttc	ttctctctta	cctagtgtgt	125520
agtgggcca	atggtggtcc	cccaaaaaga	tatgtccatg	tgttaaccct	ggaaactgtg	125580
gatgtaacct	tatttggaaa	aatggggcca	ggtgcagtg	tgtgcatgtg	tagtcccaga	125640
actttgagaa	gccaaggtgg	gagaatcggt	ggagcccagg	agttcaagaa	cagcccaggc	125700
aacataattg	gacccctgct	tctataagca	ataaaaaatt	agctaggtgt	ggtggcatgc	125760
acctgaagtt	ccagctactt	gagaggctga	ggcagaagga	ctgctcaagc	ccaaggagtt	125820
caaggctgca	gtgagctatg	atcatgtcac	ccactccag	cctgggtgac	agagtcagac	125880
tccctgtctc	aggagaaaag	aaaaaaaggt	ctttgtaaat	gtaataaaga	atcttgagat	125940
aagatcatcc	tgatttagga	tggaccctaa	atccaatgac	atTTgtcctt	acaaaagaaa	126000
ggtagaggga	actgtgagac	agacacagag	gggaggccct	tgtgaagcag	gaagcataga	126060
tgcatgtaca	agtcaaggaa	tgccaaggac	gtgtacaaac	cagaagccag	gagagatgca	126120
tgggatgatt	tctccctcac	agcctccaga	acttctggcc	tccaggactg	tgaagaatca	126180
atttctgttg	ttttaagcca	ccaagtttgt	gtgtcatttg	ttatggcaat	ggcagtatta	126240
ggactctaata	acacagtata	aaaaaataaa	aatagggcca	ggcgtggtgg	ctcagacctt	126300
taaccccagc	actttgggag	gctaaggcgg	ggagatcact	tgaggtcagg	agttttgagac	126360
caaccaggcc	aacatgggtga	aaccccatct	ctattaaaaa	taaaaattag	ttgggcatgg	126420
tggtgtgcat	ctgtaatccc	agttactcag	gaggctgagg	cagaagaatc	gcttgaaccc	126480
aggaagtggg	ggttgtagt	aatgccactg	cactccagcc	tgggtgacag	agctagactc	126540
cttcatccta	ggacacagcc	aagtcttacg	tagcaaaaag	aagttgttaa	aggtctgtag	126600
ttctgcatta	agcaacacag	gcatgtacct	atgaattata	tgattataaa	agtgctcgga	126660
caggcccatt	tcaaacttgg	cctctttcca	ccaactgtgt	actgtttctc	attccataac	126720
tagagattat	gtctttatat	cctgtcaaaa	aagtgaattt	ttgtgggcta	agacattatc	126780
cctgtgttaa	atgcaccagt	cttagtgtaa	acaagcctag	ttcctttttc	atTTtggtg	126840
tctagtatgc	atttgtatat	gctaggcagt	gtactaggca	ccttaaatac	attaccttgt	126900
ttaacctcta	caggattctg	ggaggtaggc	attatcccca	ttttatagat	gagaacactg	126960
agaagacaat	gttcataagt	gcgtcacttg	tctgagatga	catatttact	aagtagcaga	127020
accaggcctc	gagctactca	gtctgatttc	caaagccctt	gctcttaatc	acatcaactt	127080
tttccctata	tcacctttcc	cagagtgcgc	tctcatggat	aaagagcaga	agtataagtt	127140
actaggcagc	agaaaactgt	agaggtggga	agattagata	aaaaatgtaa	ataagaaggc	127200
tttaagacac	caaaatcaaa	tgtaaatact	ttataacctg	aatcagtgct	tgtgttcatg	127260
aggctagagg	tcgtgcattt	tatctctagg	tctggtgatg	ccaatcctga	tctacagcca	127320
gcagcaacag	ttccctagcc	tgcctagaag	tttgtaaagt	catgggcttt	ggttaggagga	127380
agacgagaga	aagcagaaca	gattattaca	aaccagatgc	attccccctt	gatgggtcaa	127440
cagcgatttc	tttgtaagt	aaggacagca	cactgggttt	gatgactcac	gagagagtag	127500
gagggaaaaa	gaagtctgag	gcattgcctg	gaagcctcgc	tctgcttaaa	caagtacact	127560
aatggctcat	gcctgttact	cccagcactt	tgggaaggcca	agatgggtgg	atcacttgag	127620
gccaggagtt	taagcccagc	ctggtcaaca	tagcgagacc	ttttctctat	taaaaataaa	127680
gaagaaagaa	agtaataatg	attcaagttc	tcattctcta	caaaattcac	ttatgacttt	127740
ccaaatgcta	gtgaaaactt	ttaggtattg	caaaactgcc	ttaatgcata	acgggattct	127800
catttttactt	agtctaagat	gactttttca	ctttgaactt	ctgcatcttt	atgatcgctt	127860
agctttctga	caagcaattt	cagtaagtgt	ttatcaattt	gcacccacac	gctgacacat	127920
aggggtctac	ttacatatcc	ttcatgtaat	tgagcttttg	taaatcatct	ttctacatgg	127980
tacacttctg	atTTtgtgtg	cagctttctt	gtttaagcac	tgtattaaat	gctctgcttc	128040
ctacaccctt	aggaacaatg	agaataaaa	cgtaattgtg	gttacttctt	catatcaaag	128100
gaagttcatc	tcctggttat	taaaagctat	tattaaatgg	ccatcttttt	tggcccctgt	128160
gttaagcact	ctaccaagat	accattaaat	agataagggc	cacactccat	agagatgatg	128220
gttctatatt	ctgtattttc	tgggggagtt	ctaatttcat	gcaattcctt	cttcttaaat	128280
aaaggcaatt	ctctaaatat	attacctaata	gtgctttcac	tttcatatct	ttgtaagatt	128340
tttcacataa	atcaattctc	aaaaaatagt	atcataggcc	ttttaaaaat	agtcattgtt	128400
aaaagtcagg	ctcatgaata	aatgtgtgca	ttcattacat	atattttcat	aaattcaaat	128460
ttaaaagaat	aagagtgact	agaaggtgga	agaaaatctc	tattctgatt	aggaatgcac	128520
aatcacaga	aaatttgtga	tatatatagt	catttttatct	tgtattgttt	tattttgatt	128580
ttggtgaagc	aagaacaat	gtagaaagtt	tgacaactta	aaaaagtaat	atgagtgtga	128640

FIG. 6G2

gaaagtcctc	ttccaggatt	agcaaaaaaa	tggttttttt	tttttttttt	tccgagatgg	128700
agtctcgctc	tctcgcccag	gctggagtgc	agtggcgcaa	tcttggctca	ctgcaacctc	128760
cgccctcccg	gttcagggtga	ttctcttgcc	tcagccctcc	aagtagctgg	gactacaggg	128820
atgtgccacc	atgcccggtc	aatttttttt	attttttagta	gagacgggg	ttcaccatgc	128880
tggccaggct	ggtottgaac	tcttgacctt	gtgatctgcc	cgccctagcc	tcccaaatg	128940
ctgggattac	aggcgtgagc	caccgtaccc	agcctaaatg	gccaagtgtt	attatggaca	129000
attaagctgt	agaataaaaa	tctactttta	atagctggca	tagtgcctag	tggttttgaa	129060
gccacaagca	ggtttacaaa	aaacatttta	atccatctga	atctacagaa	aactaagatt	129120
acctaagcag	aaaatgaaaa	tagttcagga	ttaaggaaga	ttaacaaatg	aagagtatat	129180
gtatttttaga	agtattactt	tatattttta	tagtataata	ataatattta	cgttcctaca	129240
cttataatga	gttttcgtata	tatatataaa	taattttaatg	gattagtagt	tttatatttg	129300
cttttagtaa	atttgggtga	tgataaaact	agttgtctac	attgtgagac	tacacctgag	129360
gcaattttctg	tgttgatata	tacctgaata	gcagatatta	cttggggagca	aataaaatag	129420
cttcaggcct	aattttgcaa	gttcattgat	ggagagtaag	catgacttca	aagaactgac	129480
tttgagttaa	aacttgaaga	atgaatgtga	caacagcaag	tataaaaaca	tgccaggcag	129540
aggtgggact	gttcattgggt	atcagggtta	gtgtgttgat	aaatgctcaa	agtaggaaat	129600
acctttcttc	ccccacacat	gtcagaaaa	aactgcaata	gaatgcaacg	acatctcaga	129660
gataaagtgt	tcaacttagc	tctcagagac	cgttcagtta	cattttgtta	tgacattgga	129720
attgattgca	ttttgaaggc	aattctaaat	gcaaagtctt	cattttgttg	atagaagctg	129780
ggttattttat	tatgaaatth	caaaaattaa	gtaaaatatc	taattaggat	tataccagca	129840
aaggcaaatt	tagaattcaa	gacttcatga	tccatggtaa	gattatttta	atgcaactct	129900
gctaattaac	tgaaatttcc	tttaactctc	acatctgcct	tttacttctt	aagacatttt	129960
tctagtatttt	caccagagca	agatatcaga	agggtaaatc	tcttaccaat	gaactttgct	130020
aattcttagt	gactccgttg	accctgggtg	aaggatcagg	aacaaagtga	atgaaatata	130080
ttttaataca	tttctgcttt	ctctaattcc	aaagaccact	ctaaagaata	agttatttgt	130140
gggtattatc	tgaaacttgg	gattaaaaga	gaccgtgatt	acccttcagg	gattttggca	130200
aaacttaagc	catttcatct	gaagagcaaa	gcaagcctcc	cacactcttg	gcttattctc	130260
acaattatct	agatatctag	caacaaaact	cttgagttagt	ttgttaacta	cagatgccaa	130320
gggctgacag	tttacttttc	agttttcaga	atatcttttg	tttcagtggg	gtaagcacac	130380
catcagaatc	tctactatth	aaaataatta	agttataatt	gtaacttcca	ttagatgtag	130440
tacttaaaagg	aatctagaag	acacaactca	ttaattatag	gaatttgact	gcaaattctt	130500
ctgggggggtc	tgaattgcaa	aggaggcatc	tttgtaagtc	agactcaact	cattactctg	130560
tgatgcaggc	tcttccaaat	ggcagcagaa	acgtattact	ctctagaaac	actacagtga	130620
tgctacaatt	tcagggttct	gtagagataa	ggacaaattg	acagaaacac	attcttagaa	130680
ggacagtatc	atttaaaata	aaaatactgt	caataattga	caccaggata	gcttctccat	130740
aataaaattct	ttatgattth	ctgattttta	gaaatcagaa	ttgaactttt	taatgtgaaa	130800
aaaatgagag	aattgthtca	aaataggacc	acatttctgt	gtataatttt	aaaagthtaa	130860
aaatatthga	ttagtagact	gataaactga	aacatttttg	ataagctttt	cattacatac	130920
aaaccatata	atttgtaaaa	aattggaaat	tattcaaaaac	ttcacataac	taaagtgacc	130980
aaataaatac	tgagaggaa	agaaaaggag	tcaaatgta	ctagcatttt	cttttttttt	131040
tttttttttg	agaaagggtc	tcaactgtgc	accaggtggg	gagtgcattg	gcacgatcat	131100
ggctcactgc	agcctcaact	ttatgggctt	aggtgatcct	cccacctcgg	cctcccaagt	131160
agcaggggact	acaggcatgc	gccaacacgt	ccagctaatt	tttttggtat	tttttgcaga	131220
gacgagggtt	caccagggtg	ccgtggctga	tctggaaact	ctgggtctca	gtgatctacc	131280
caactcagcc	tcccaaagtg	ctgggattac	aggcgtgagc	caccgcaccc	ggccttaact	131340
agcattttct	aaaaggaagg	accagcagct	gaacggcaat	atcaataatc	atgttcaaga	131400
ctatcagaca	tgcaagctgg	ggatgaatgg	gtggaagggg	aaaatgatga	ataaatgatg	131460
aacacaagta	tagaccaggt	ggatttgaga	tgcccaagat	gccagtgaga	tattcaaagt	131520
ttaactcaaa	agccacttcc	catatgaaat	cctgacaaac	actcctacgt	ccaactggaa	131580
ttaattttctc	ttctgggctc	ccacagcaat	ctgtattttt	ctaatagcac	aacactattt	131640
tgtttgtaga	tatttctctg	atagcattac	tatctttctc	ctttatcaca	actgtttgaa	131700
gttctttttg	ctcttgcatc	cactgttgcc	caatcccaat	gctggaaggc	tcatcttatt	131760
aagttctgta	ttcctagtgc	taacacactg	tctaccatag	atgatgttca	ataaatggtt	131820
gctaaatgaa	ttctcttggt	ataatagcac	tatggcaaca	taatcgacgg	taaaaatttc	131880
ttctcaatgt	ttacttttag	cagaatgcac	tcatthtatca	actttcattg	agaatatgct	131940
aattttccatg	accctgctag	gaaataggaa	aataaagatg	aatgtaataa	ggtgctcatt	132000
ctactgaaa	tcttgactag	tggagaatta	tggatccaac	ttttcatgaa	atgccttcag	132060
tggtaagaat	tctcatatth	ggaataaaaa	atgttatggg	ttgtgccaa	atacctacac	132120
acttcataat	tttgtagagg	gctgtcctta	ctgcagaaat	gtatactact	atagtcatat	132180
gtggaaattc	tttttatgat	gctaactgca	tgctaaccag	actttttta	ttataacttg	132240
cattaaataa	accatgctag	gaatccagga	atctagcttg	gtttattttt	catacaatgt	132300
actcttttgta	atatgcata	actacataaa	aattctatta	atggcctcgt	actaaagatg	132360
tgtctgttgg	ggaatcagtt	attctgtata	atthtatctt	aattgatata	ttaaaactca	132420
ccaaaaatat	aaactccgag	taaaagtatc	tgcatgggtg	gcataatgtt	attattttta	132480
gtgtcagcgt	atacatthtt	atgccataaa	gttataaaat	gaaaaaatag	tagcctttta	132540

FIG. 6H2

tattaagttc	atgcttatgt	agttagtaaa	aacaagaaag	caattaacat	acaaaccatg	132600
atggttggtta	aacttgcttc	agtttgtgtt	ttttaaaatt	tgaaagtgag	aaatacagct	132660
cgaagtcagc	tcatattttc	agtaagtact	gatgaggatg	tactggccct	attgactacg	132720
ctgaccccat	taaaatattt	gtgagtcctaa	aggttcatat	gacgctgttc	cttcactcta	132780
gcaacaggcc	atacatgtct	tacatagggga	ctctgttcaa	ttcatttaata	cctcctgaag	132840
tgctcaacat	cgtggttcat	ttatagtaga	tactcaatac	atactccatt	aactgaattc	132900
taagataaac	tgtctgttac	tgacagaaat	tttcacttaa	gggagtctcc	gtggctgaag	132960
gcaattttga	aatcctgtaa	aagaacccac	tcctctcccc	aagtaatgaa	gtttgtcagt	133020
ttcaagcctg	taataaggta	ctgacttaaa	attaattttc	taataataca	gtactgctat	133080
gtatctaagt	tgggggttagt	caatgatagg	aaaaaaacat	aagacagagt	cacatttaaa	133140
aatgtgtgct	gtggtgcagt	gtgacacctg	cctgtagtcc	agctattcca	ggggctgagg	133200
caggaagatc	ccttgagctc	acgagtttga	ggctgcagta	agccactgca	ctcagcctgg	133260
gcaacagagt	gagacccctgt	ctctaaaaaa	aattcgtttt	aagtgtgctc	aggacataac	133320
aggagccgct	ggtaacatgc	catttccact	gtgaatatgg	taaggacaga	atccctgtct	133380
ctaggccctc	ttccactagt	caatctcatc	atcaccatca	aggccaacat	tggatattctc	133440
tcctctgaga	caaagtcttt	gacattttct	atactatact	atgtcttctc	ctccccaaat	133500
gcatatacaa	ataaaatttg	aatgcttctt	tctccattta	gtgtaatttt	ttttataaca	133560
tagacccaat	tttcaaacc	cacaatggtg	gatttttatt	gatgtattgt	aaaaagcgct	133620
ggattgaagt	caaattggctt	gggagacctt	aattctactc	ctgcctgtac	catgaaagag	133680
acaaatccca	aggcttttga	gggcttcagc	ttccttggtt	gtagaataaa	gaattataaa	133740
atcatctctt	ttggctctac	tgggcaataa	aaagctatga	ttctaagcct	gttccccctt	133800
ctcacctaag	aatacaaaat	tgatacaaaag	aggccgcaga	atgtgtcaaa	cactccctgt	133860
tgcttggaa	tctctcttcc	tttgggttca	gggataaagg	tatgttattt	cttaagtctc	133920
cctttgcttt	cttctgcttg	cctcgtaaat	atttttccat	cttggcagtc	ctacatgtct	133980
tctcactcta	catgttttcc	ctagggtgatg	tgacccagcc	tgtggcttcc	actgccatcc	134040
acacacgtcg	ctgcctctct	ccacatcagc	atcgcaacta	tctcctggaa	gctttccaag	134100
tgttgaacta	cagtaacctc	aaccgaactg	ctgttcattc	accccacagg	cttgccccct	134160
ctctgcactc	ttgtgagaac	ctgagagtca	tcctaaactc	ctccttccac	ctcactcccc	134220
acatcaaact	gattaccaac	ttgtgctgat	tttatcttca	aatactctcc	agaattgtcg	134280
ctgtcatgga	ctgaatat	gtgttcccc	aaattcatat	gtcctaatac	ctgatgtgac	134340
tgtatttaga	gacgtgacct	ctaaggagta	attaaggttc	agtgagggtc	aagggtggagc	134400
cctgatctga	taggatcagt	gtccttataa	gaagagacta	gagctgggca	caggggctca	134460
cacatgtaat	cccagtat	tgggaggctg	aggtgggaag	atcactcaag	gagaggagt	134520
tgagaccagc	ctgggcaaca	gagtgagact	ccatctctac	aagaaaataa	aatagtccaga	134580
cacagtggta	cacacctgtg	gtcccagctc	ctcaggaggc	tgaggcagga	ggatggcttg	134640
agcccaggaa	tttgaggctg	cagcaagcta	tgatcacacc	tctgcactcc	agcctgggtg	134700
acagcatgag	acccagtctc	tttaaaaaaa	aaaaaaaaaa	aggccatata	tagcccagaa	134760
gagcgtcctc	acaaaaaccc	aatcctgata	gcacctggag	gacttccagc	ctccagagct	134820
gtgagaaaat	ttctgttgct	tgacccgccc	agctgttggt	attttgtgtg	ggcagcccaa	134880
gctgactcat	cagtgcacct	ctctctgtta	ccgcagagta	gctcatcatc	ctctcttccc	134940
tagagtccag	ccactctctc	acatctacct	acctagcagt	atcactgtgg	gttagagtca	135000
gatcactgcg	gattaagtcc	tcattctgcc	actgcctgtg	taaatctgag	caagttactt	135060
aatctctctg	tgtgtcagta	acctccctgt	gaaatgaggc	taataatagc	aggggtgttt	135120
caacaaggcg	atacatgcac	aatgcttaca	acacagcttg	gcacattata	agcattcaac	135180
gaaaagttag	ctactattat	ctcatcogtt	atcagaataa	accacctaag	ccacaaggct	135240
gcccacatca	tcctcatgtt	ttaaaacact	tcagtgggct	ccccaccatc	aacagggtaa	135300
agttcaagct	tccttagcat	ttcttagagg	ctccatatga	atccccaggt	tcactacag	135360
gaacacaggt	gaactttcca	ctccaacctc	aggctccttc	gtgtcactcc	tcattccacat	135420
ggaggtaagc	agcaagagac	tcctgtcagt	tcctgggtgt	tcctgacccc	tcaggcagac	135480
tctccccagc	cctctgctcg	caacgtcctt	gccctttgct	tcctttggcc	agctcccatt	135540
cattctcctt	gattctgctt	ggaagtttcc	ctctcaggaa	ggcttttatga	accttagtgt	135600
aggttatgaa	cccatctttg	ctcctttcat	accttttgca	agcctttatt	tatttatgaca	135660
cttaaccatt	atcatactga	agtgcacctg	tggtgtgtct	ttgttcccca	ctagacagaa	135720
aactcaagat	cagagaccag	ttcttgtttc	tttttttttt	tttttttttt	ttttttgtat	135780
cacagtgttt	agcagcctgc	tatatggtaa	atgtcagtaa	atgttccaca	aactgaatgg	135840
aattgagctc	tggaaactag	accatctttt	ccatacccat	cactcctgtc	ttagttgaag	135900
tccttatctc	ccatttgaag	caatgcaaag	gatttcctaa	ctctaattctc	tcctttcttc	135960
acaccatcct	ttaaacagcc	gacagaatgg	tcactcctaa	gcacatatat	cctatcttac	136020
atatcctaga	ttcggaacct	ctctgggctt	ctcaccatat	aagaagaaag	tctaacctcc	136080
ttagcaaggt	gcataggtct	tcaatgggct	ccacctcact	tctctatata	tacctatact	136140
cctgtctacac	taaacttctt	tcttactgtt	gctggaacaa	gttcaacgct	ttcaaacctc	136200
cctgactttg	catattctgt	tcattctgtc	aggaatgccc	ttctctctta	tgccctggag	136260
attctcattc	attccatatg	acctatttca	taagtcactc	cttaatgaag	cctttcttag	136320
atatccactg	gggcaatcag	ctgcttgctc	ctgtttccac	agcacattgt	tcacacagat	136380
agcacaggac	ttaccacaag	ttattataat	tttgtctgtc	ttgcccattt	gaatccaagg	136440

FIG. 612

gcaaggacgg	aatcattctc	atcttttgtat	gtcctgggaa	ctagaactgt	acctgagaca	136500
taataaacac	ttgatattgt	tgtaattttt	aaataagtta	atgaacggaa	tggttagaaa	136560
aagtgagaag	aaactctggc	ttactgtata	tcatactgtc	atactaaaaa	tatatactga	136620
agacagaatc	acatttatatc	atcacttttc	acgctatagg	ccatgatcca	ttatgaaaaa	136680
gaggatagta	aaaaaatcac	agggcacaa	ttttgtttct	gtcacacaca	tgtgtacctg	136740
tatataggac	tggaatgtaa	aacgcatggt	ccattgtaga	acgtgggttt	aaaagaggct	136800
tggaatacac	tgcatatggg	catttcttag	tttagtacia	tttattattt	tcgtaataac	136860
ctcagctata	atataagctc	accatgaagc	attttgggga	gattaaatga	gatgtgaaaa	136920
gtaaattgtg	tagatagact	gaattcatat	catagcttgc	tctgatactt	tacaaaaacat	136980
ttaaccttac	ccacaagttt	tagtttcctc	actaaagtca	ccctgaggac	agtaattggga	137040
tcttcctcac	agagtattgt	gaggaataca	taagagaacg	tacgtaaatg	cctggcactt	137100
agtattttatt	caataaatct	tagcaatgat	gatgataaca	acatgggtacc	tggtacataa	137160
gagagttaaa	aattagtttc	ttcagtcaaa	tgtgcttaca	ttgatagttg	atactaaactg	137220
gggttaaaaag	gtcattgtctg	gcatctcaga	aagatagatt	acagtgaat	aaaaaatgac	137280
tactgcttaa	aatgaatgaa	gacttattta	caaagtcatg	ttcatctggg	acaataatga	137340
agtgcgtcaa	ttggggagaaa	atgacaaata	atacaagtga	atatacaatc	ttacttaaga	137400
cgaaagaaat	aggacaccag	gctaactatc	agttccttaa	accacaactt	tatttctgat	137460
acaaagagac	agtgagacaa	tcagggtctc	cctcaaataa	attacttaat	ctctcttcaa	137520
ttcagttttg	catctgtaaa	tataaataac	tacaatttca	cagtatttcc	atttaaaaag	137580
ttctagtgc	acatcagaaa	caagaactta	gtagggtgtc	aaaaagaaat	ataagttctg	137640
ctttgttagc	cagcaaatag	ttgcctgttt	ctagccctca	cttcttttct	cctaaatccc	137700
tatatgtcat	ttatttaact	taaagtgtctg	catgtggcac	tacgagaaag	aaaaagatat	137760
ttggtaaatct	tggttaaatc	attagacatc	cgaggctatc	tggaatcacc	ttgggtctac	137820
agttagacat	cagctatggc	ttgttttatt	taaaaattca	tccactgatg	catgataatg	137880
gaattcacag	gagagcaatt	tacaaaaaaa	aagaaattta	ttgattttata	atgtgagata	137940
ttaatttagc	cacaaatatt	tattgagcat	ctcctacatg	ccagggaatg	gactatataat	138000
ggcaggaaaa	cagataccaa	tcattttatat	caggcatttt	tttctaatag	aaggatattc	138060
gcaggagaca	atgcatagca	ccatgccttg	cagtaacag	acattttaata	actattagtt	138120
gaataaaaatt	ggagactaga	atgatacata	aagaggcaag	aaagagcaaa	gataagcctt	138180
tctgagaatt	tctatcatgt	tttgcctaat	agcttgtctt	tatccactgc	ttgtattttt	138240
ccatgtagct	aatcctcatt	ggtcgttaga	attgagacac	cctttccttg	aaatcaggag	138300
ctataggagg	ccattcttcc	tactgggcat	tttctttctg	ggacagggtc	tcactctgtc	138360
acctaggctg	gagtgcatca	tagctcacta	taaccttgaa	gtcctgggct	caaggaaatcc	138420
tcttgccaaa	gaggtgggat	tacaggcatg	agtcaccatg	ccagcctatt	tggcatttct	138480
actgtagaca	aagcagactt	acagcagtag	gtctacctgc	ctaatacaaa	aagaaaaaaa	138540
agaattttta	caaacaaatg	agggaaatcag	atccagaaag	tgattcttat	aacttagatt	138600
acttagagta	gatctataat	ctgctctaga	tccactgcat	acagtgggac	cttcttatca	138660
tattccataa	atagcacttt	tctcagccca	gctttttgatg	atagctgaac	agactaacag	138720
tttgtctaac	aaaggctaga	gaaggggata	gcaaataatg	gcccacaggc	tgaatcctgc	138780
ctgctgctca	gtttttgcaa	gtttttattag	aatacgggtca	tttccactca	ttttccactc	138840
gtcaatggct	gctttttgctc	tacagcagca	gagctgggtg	gttggggcag	gggtcacatg	138900
gctaacaaag	actaaaatac	ttatcatctg	acctttttaca	gaaagtttgc	tgatccttgg	138960
agtgtacaag	tattctatat	tgttgattaa	gaacagaacc	acaagtatta	gaagtttagac	139020
cagcagggtg	taaagctgat	catctactaa	tataatggaa	attgggggtc	ccaatcagga	139080
ctcttgcttt	gatagaaggc	catcttaacg	aggagggaga	cacctgcagg	caaagtcaga	139140
atctttctgca	ggaaaagtgt	tgagtccatt	tccccttggt	aacaagtgtc	cagctatgca	139200
tttcatcttt	agtaaccatg	cttctataacc	tggttctcct	tggcaaagat	ttctttcttc	139260
agtaagtctc	aagactttct	gggaaggtag	ggagatatgg	gggtaaaagt	gtcccaggac	139320
ttactgaagg	aagtgtttta	tgattatctg	atagaatcac	tgtatcatgg	tagagaaggc	139380
aaacagaata	taatctgaaa	atagaggtga	gggtgaacaa	atgggcacta	aaagtgaact	139440
cagcatcagg	aaggtagcaa	aacaagacat	cagtcaaagc	tatgggggtga	ttcagacctc	139500
aggaagattt	aatgtgggat	gtttccgtgt	gccaggagct	ggacacttaa	gcaagaggag	139560
atccaggaat	gttgctaaaa	ccatggcctc	catactttat	tggaattagc	acaacttatc	139620
cttggtttct	tcatttttgca	atcaaaatct	ttaaaaacac	attattttaaa	aatacattat	139680
tttaaaaagct	agaatgaaaa	ttatgatata	atcttaggtg	tttaaaaaac	atccaccagc	139740
cgggcgtggg	ggctcatgcc	tgtaatccca	gcactttggg	agtcaggagg	gggcagatca	139800
cgaggtcagg	agattgagac	catcctggct	gacacggtga	aaccccgctc	ccactaaaaa	139860
tacaaaaaat	taaccgggag	tggtggcggg	tgctgtgggt	cccagctact	cggtgggctg	139920
aggccggaga	atggcatgaa	ccggggagg	ggaggttgca	gtgagctgag	atcgtgccac	139980
tgactccag	cctgggtgac	agagcaagac	tccatctaaa	aaaaaaaaaac	aaaaaccatc	140040
cacaaaaatg	ggaagaagtg	atgaaaaatt	acagtccaag	aagaaggggc	atagctgttt	140100
aaatcaattg	gtatatattg	tatctaatat	accccacagt	aacgacaggt	atttaacaaa	140160
tggttctgtg	gaatttgacg	attccatttc	oocctacatc	catatgcaat	ccatcagcac	140220
cccacatcca	acccatcagt	acatcctgtc	agcattggct	cccaaataata	acctaataatc	140280
aacacatatc	ctactatctc	tgctgtctaca	acttttagtct	gaaatctcat	aatctcccac	140340

FIG. 6J2

ttgtactact	gtagatgact	ctgaatgagt	cttcttgcctt	ccattccaca	cagcatccat	140400
actgatctat	tttttttttc	aattttttgt	agagacgggg	tcttgccatg	ttgcccaggc	140460
tggctcttgaa	ctcctggctt	caagggatcc	tcccacctca	acctcccaaa	gtgataggat	140520
ttcaagtatg	agccactgtg	cctaaccctg	actgatcttt	ctaagcataa	atctaataat	140580
gccccttcct	tgattaaacc	cttcaatgaa	ttcacattaa	gcaaacaacc	tggccagggtg	140640
tgatggttca	tgcctgtaat	ctcagcactt	tgggagacca	agatgggagg	atcacttgag	140700
gccaggagct	caacatcagc	ttagacaaca	tggtgaaact	acatctctac	aaaaaataca	140760
agaattagct	gggcatgggtg	gtgcacctat	agtcacagct	actcgggcgg	ctgagctggg	140820
aggatcactt	gagccctgga	ggccaaggca	gcagtggagct	gtgattatgc	cactacactt	140880
cagcctggat	gaagtggagac	ctgggtctcca	aaaaaaaaaa	aaaaaaaaaa	aagaagcagg	140940
gcaagggtggc	tcacacctgt	aatcccatca	ctttggggagg	ccaaggcagg	cctcctggat	141000
catgaggtca	agagatcgag	accatcctgg	ccaacatggt	gaaaccccat	ctctactaaa	141060
aatacaaaaa	ttagctgggc	atgggtggcat	gcacctgtag	tctcagggtac	ttgggaggct	141120
gaggcaggag	aattgcttga	accggggagg	cgaagggttc	agtgagccaa	gattgcctgg	141180
tgacagagcg	agcgagactc	tgtctcaaaa	aaaaaaaaaa	aaagaaagaa	agaaagaaaag	141240
aaagaaagaa	gaaatcctta	gtcctgtctt	aactacttga	gaggctgagg	gaggaggatc	141300
acttgaacct	aggaatttga	ggctccagtg	agctatgaca	gcaccacggg	gctctggctc	141360
ggagagagtg	agaccttgtc	tctaaagaag	agtaaaagaaa	agaatgaatg	aatgaacaaa	141420
aagaaagaag	gaaaggaaaa	gaagagagag	agagagagag	gaagaaagga	aggaaggaaa	141480
caaaataaaa	taaaataata	aataaataaa	cccaaatacca	acttctttac	cctaataaac	141540
aagggtcaaa	taatctcatg	ccaactaagt	ctctgaacag	ctccttccat	tctattgcca	141600
gattactcca	tctttcagcc	acaagacctt	tttatcttcc	ttttaccagc	caaacacaat	141660
cctacctcag	aacatgtgca	cttttctctt	ctcttgactt	gaatctcctc	cacctcttat	141720
ataatcttag	ctcaaaggag	cttttcttga	caacttagcg	aaagtattta	ttccagtcac	141780
tctctgctac	attattccaa	tttatcttct	ccatagtaca	tttcagcaca	taaagatttc	141840
cttagtatgt	gcttggttgc	tttccccaac	ctcctaaaat	gtcagcatto	cttgaggggca	141900
gagactgttt	cattcctgta	tcatcagcac	ctaagacagt	tcctggaaca	taccaagtac	141960
ttaataaaaa	tttgtttatt	gactagctat	gacacatttt	acttatataa	tttcattttc	142020
tcagcaaaat	gaacactttg	aaatgtaatt	aattactgat	ttttgcagta	ttttctaatt	142080
atttaataaa	aatatttact	attttgggtca	accagaattc	ttacattggt	ttagcaccca	142140
gatagcttct	aaaaatgctt	acaattaaca	caattttatc	tagcaatatg	tatttatcac	142200
tagacagaat	gcactgaact	cttcttcatt	aataaaaagc	aatccagggt	gggtgcagtg	142260
gttcacgcct	gtaatcctag	catagtggaa	ggccgaggag	ggaggatcac	ttgataccag	142320
gaattcgaga	ccagcctggc	caacatggca	aaaccccatc	tctataaaaa	acacaaaaat	142380
tagctgggta	taatagcaga	catctatagt	ccagctact	caggaggctg	agagggtggga	142440
ggactgcttg	accccaggag	attgagggtg	cagtgcagcg	tgattgtgtc	actgcactcc	142500
agcctgggct	acagaatgat	acctcatcta	aaaaaaaaaa	aaaattagcc	aggcatgggtg	142560
gcatgcacct	gtagtcccag	ctactcagga	ggctaagggtg	ggagggtcac	ctgagcctgg	142620
aaggtagaga	ctgcagtgg	ccctgggtag	cccgcgccac	tgactccag	ccctgagtga	142680
cagagaccca	gtttcaaaaa	aacacaaaaa	acagaaaaaca	aaacaaaaaa	acaaaaaaac	142740
ccaatgcatt	gtgaaatgt	taaatccatt	ataaagaaaa	gtacaggggt	gggcatgggtg	142800
gttcatgctt	gtaatcccag	cactttggga	ggccaagggtg	ggcagatcac	ttaagggtcag	142860
gaattcaaga	acagcctggc	taacacagtg	aaaaatgcaa	aatacaaaat	aagccggggag	142920
tgggtggcgca	tgcctgtaat	cccagctact	cgggagggtg	agggggggaga	atcgcttgaa	142980
cctggggagg	ggagggttga	gtcagccaag	atcgaaactc	agcctgggta	acagagactc	143040
catctcaaaa	aaaaaaagta	aaaagtatat	agttgattct	gcagggactt	aaaaaagtat	143100
aaatatcttt	tttaacatca	caaagctctg	atatctgcag	gtttatgact	aactactagc	143160
tcactcccat	gaatacacgt	atgtaaacag	gctctataca	atctacaatc	ccagactaag	143220
gggaaaaaac	tgtcctgtca	ctgtgggtctc	caacccttgg	cccatttctt	tctcttgac	143280
cacaaaactt	ctcaggaggt	gcttgtttcc	tcttgatcca	cttatcttta	gcccactcca	143340
atctggcatc	ggtttctcag	actctccact	aaaactgctt	ttatgaaggc	catcaatgac	143400
gttcatgctg	ccaaatccag	cagacacctc	ctgttttcta	atttttttta	ttgttatattt	143460
ttaagagact	gggtcttgc	ctgtcaccca	ggctggaatg	cagtgatgcc	atcatagctc	143520
actgcagcct	taacctccct	gagttcaaga	gatccttcta	cctcagctgg	gactacaggc	143580
atgcacagct	atgcctggct	aattactcaa	tctttaacat	agctgataat	tcctcctctg	143640
aaacactctc	aacttttaag	aaaccctgtt	attttctctc	tacattttta	gccagttctt	143700
ctatcagctt	ctccttatct	gacctctaaa	tgtaagaac	atatacaaa	actgaacctc	143760
gtttttttct	ccccttactg	tactgtcctc	ggcgatgtc	aatcagtcct	attgcttttag	143820
atactatctg	ttgaaacact	gaaatcactg	gttttttttg	tttttttttt	tttttttttt	143880
tttttttgaga	tggagtttgc	ctctgttgcc	caggctggag	tgcaagtggg	caatctcggc	143940
tcactgcaag	ttccacctcc	tgggctcaag	caattttcct	gcctcagctc	cccaggtact	144000
gggattacag	gtgtgtgcca	ccataccag	ctaatttttc	tatttttagta	gagatggggg	144060
ttcaccatgt	gtccaggctg	gtcttaaaact	cttgacctca	ggtgatctgc	ccaccttggc	144120
ctcccaaagg	ttgggaaaag	atatcccaat	ctttttccta	tgattttotta	attgatctac	144180
ttgacatatc	cacttggact	tttaataggc	atctcaaact	taatgtgttc	aaaataaacc	144240

FIG. 6K2

tctgtgactttt	ccctcccaaa	cctgtcccta	cctccctcaa	taactaatat	tatcattctt	144300
atattcatat	attgaataaa	tgtttgttcc	cccaagtatt	tgttgctata	aatttatgaa	144360
gaattctttt	ctcactagtt	attataatta	aaatgtaata	tttattttct	ttaaaaactt	144420
tactttgtag	gattattatt	ttttaaacag	ggaccaacaa	taaataactt	ctctacttga	144480
ttaaaactag	ggcttctct	tgtgctccct	caggactatt	tctttgtaaa	aacaataggc	144540
taaatcagta	ctgggtgtcaa	agaaatcata	atctcacaac	tttataaata	cagcatgtgg	144600
caagggattt	tcccatctta	tatagtaata	aaattttcag	ctgtgccatg	gctaaaagtt	144660
taccatcaaa	gtttgaattt	taaattagag	gtagtcatct	ttctttcttt	ttaaagaaat	144720
ggagtctcac	tatgttgccc	aggctggagt	gcagtggtta	tttgcaggca	tgaccacagc	144780
acgctacagc	atcctggcct	caagcaatct	tcctgcctca	gcttgccaag	tagctgggac	144840
tacaggtccc	tgccaccaca	cccagcagaa	atatttagct	ttctgaattt	ctcaagtgtg	144900
tgtatgaatg	agactagtgg	ggtccttaac	caagattcac	aggattttta	gtgatttatt	144960
aaataacttg	gatttgtatc	taccagcatg	ttctttgagg	tacaggtatg	ttttttatat	145020
ctcctaatat	agttcattac	aatgctaaat	actaagatgt	gatgctcaca	cactacagaa	145080
tagccaagca	aatgaactac	ttattctcat	agggctatta	taattaacaa	attcttgtat	145140
caccccatca	ttatcaacaa	caacatgata	ggatttccct	ttatcttgaa	gagtctggaa	145200
aaagggtaac	agagagatat	ttctgaggaa	caaactggta	atgagggagc	tactgtctcc	145260
attacaatac	tccttctaga	agctcaatac	ataatgacta	atctctggaa	aaaagcaagt	145320
gtgagaatgg	aaggctcttc	ttcaaactat	gcaaaatgaa	tcaatcagca	gtgaacaaat	145380
ttatgagcca	aacaaattcc	tacaaaaatt	accatcatat	gctgtcatgc	atgtctgcca	145440
gtctattttat	catattattt	aagaaacaaa	cattttattga	agatttatca	tgtgctcagc	145500
actgcccagg	aggaataaaa	gagcataata	tcattcttta	gaaaataaca	ttaacacaaa	145560
tagaaaacaa	gaaaccataa	tgttaaaaat	attacatagt	aacacagaaa	gacaattgtat	145620
aattatacat	acgcactaaa	gcaaagataa	cataatttat	aaattatgag	gtacagaata	145680
gttagattct	gaaaattaaa	ataatcagga	aaaacttcat	gaagatgaga	tctgggctgg	145740
atcccaaagg	ataggcaggt	ggatcatgta	gaacagggga	aaggagttcc	tgatcgggga	145800
tacaatatat	gtaaaaactc	ggagacagga	ctgagcgtga	aatgttaatg	ggacagtaaa	145860
gaaatcttcc	tctgcagcgg	gggaaaaaac	agaataatgg	gaaactgcat	ggttaaaagg	145920
tttgatgtta	agatagtgtc	tggacacaaa	agatcttaaa	gttgagtcaa	aagagtacaa	145980
tgaaagcatt	agaaatagaa	gataaaacac	aattaggccg	ggtgcagcgg	ctcatgcctg	146040
taatcccagc	actttgggag	gccaaagggt	gtagatcact	tgagggtcaag	agtttgagac	146100
cagcctggcc	aacatgggtga	aaccccgctc	ctactaaaaa	tacagaaatt	agccgtgaat	146160
gatggctcgt	gcctgtagtct	ccagctattt	gggaggctga	ggcaggagac	tcgcttgaat	146220
ctgggaggcg	gaggttgccag	tgagccgaca	tcgcgccact	gcactccagc	ctgggtgaca	146280
gagcaagcct	ctgttttaaaa	aaaaacggta	aaaataaata	acatttacta	ttgttttctg	146340
atgatatata	tggcctctaa	ttgtaaagct	gaatgcctag	tttaccactt	tttttttttt	146400
tttgagacgg	agtcttgctc	ttgttgccca	ggctggaggg	caatggcacg	atcttggtct	146460
accacaacct	ctgtctccca	ggttttaagcg	attctccagc	ctcagcctcc	cgagtagctg	146520
ggattacagg	catgtgccat	catgctcagc	taattttgtg	tttttagtag	agatgggggt	146580
tctccatggt	ggctaggctg	gtctcaaaat	cccaacttca	ggtgatccac	ccgcctcagc	146640
ctcccaaagg	gctgggatta	caggcgtgaa	ccaccgcgcc	cggcctatca	ttcttatttt	146700
atgcattagg	aaactaaggc	tcaacaagat	taaagctgtc	tagggtcaca	aagattgtaa	146760
gtggaggggg	tagaattcaa	aatgagacct	gcttgactcc	taagcctgta	ccattttctac	146820
tatatattaga	gtgaagtaga	tgggttgaag	aaatatttag	gaggtgaaat	ttcaaaaagt	146880
tacagtacaga	agagaagaca	tatatggaaa	ccataatttt	cacacagtaa	agtgtcaata	146940
ataaaggcat	aatgccaaaa	tgacagaggc	tgtgcatggg	ggctcatgcc	tgtaattocca	147000
gcactctggg	aggctgaggc	aggaagatca	cttgagccca	ggagtttgac	accaacctgg	147060
ccaacacagc	gaaaccccat	ctctactaaa	aatacaaaaa	attagctggg	aatgggtggta	147120
cacacctgta	atcccagcta	ctcaggaggc	tgaggcatta	gagtcacttg	aacctgggag	147180
gcagagggtg	ccatgagcca	agatttgtgc	actgcactct	agcctgggca	acagagttag	147240
actctgtctc	aaaaaaaaaa	aaaggaagac	ctgagggcta	gaaccctgaa	attgggaatg	147300
aacaggactg	gctgaaaatg	tttcttgcac	ctgataaaaa	tcttgaagaa	gaatgcttta	147360
aatagataag	aaaggagaga	gagaggtggg	cagtgagagg	agaccaccct	aagtaatcag	147420
agattactta	cgttggttac	tcaggctggg	ctctgaatct	gattataaat	gaaatagaga	147480
ttacttaaaa	caaagggctg	taaggttagca	ctgtccagca	gcactttcta	tgatggaaat	147540
cttctatatc	tgcactgtcc	aataaggtgt	agctgttagc	acatgtggcc	actgagtact	147600
tagaatatag	ctacgacaac	cgagaggctg	aatttttaaat	ttattttta	gaattcaaac	147660
aaattttatt	ttaatcacagc	acttttaaat	ttatttttaa	atttttaatct	attattttatt	147720
tagagactgg	gttatgagac	tggctaattt	ttgtattttt	ggtagagacg	gcgtttccacc	147780
atggtgcccc	agttagtctc	aaactcccgg	gctcaagtga	tccacctgcc	ttggcctccc	147840
cgcaagtgcc	tgagaataca	ggtgtgagtc	accacgcccc	gcctaaactt	aaattttaaat	147900
agccacgtgc	gggtagtggc	taccatactg	ccatgtcaac	tgtaagatgt	agaagtccaga	147960
tgtgagcaaa	gaaatgacaa	gccgttcaat	gctgttagag	aatgaaattc	aaggttccaa	148020
tgatctgaac	ttgtgtcccc	tcaaatctgt	atggtgaaat	cttaatcctc	aatgcaacag	148080
tattaagaat	ttggggcctt	aggaggtaat	ttgggttttg	gggtggagcc	ctcatgaata	148140

FIG. 6L2

ggatgagcac	ctgaggtagc	ctcttttgacc	cttccaccat	gtgaggacac	accacgaagg	148200
caccatgttg	gaagcagaga	gtgagcactc	ccaagacact	gaatctgcca	catcttgatt	148260
ttgggcttct	cagcctacag	aactgtgagc	aataaatatc	tgctgtttat	aaattatcca	148320
gtgtaaagta	ttttgttata	gcagcctgaa	tagactaaga	caaagggtga	ctaaggcagg	148380
ataacagggt	agaaaaggag	gcagggcctt	tttttttttt	tttttttttt	tgagacaaag	148440
cctcactctc	acccaggctg	gagtgcgaatg	gcattgatctt	ggctcactgc	aacctccacc	148500
tccagggttc	aagcaattct	cctgtctcag	cctcccaagt	agctgggatt	acagggtgtgc	148560
accatcacac	ccagctaatac	ttttgtattt	ttagtagaga	cgggggtttca	ctatgttggc	148620
caggctagtc	ttgaactctt	gaccttaaat	gatccaccgc	cctcggcctc	ccaaagtgtc	148680
gggattacag	gtgtgaacca	tcgcgcctgg	ccgaggcaca	gtgttttttac	agagaagcct	148740
gtttaagggt	taatcatata	aaatgtatga	tatccagtaa	gttttgatat	aaaaaagaaa	148800
cacctggcga	ttttatataa	tatatgtgtc	taaggaaattt	taagcactct	acattctgct	148860
ctctaagctc	tgtaaagagc	accagggtat	tttttttttt	ttttcttttt	gaacagggtc	148920
ttgctctgtc	agccaggctg	gagtgcagtg	gcacaatctt	ggctcactgc	aacctctgcc	148980
tctcgggctc	agcgattctc	ccacctcagc	ctcctgagtg	ggtgggacca	caggcgcatg	149040
ccactacatc	tggctaattt	tttgtagaga	tgggggtttg	ccatgttgcc	cagggtggtc	149100
tttaactcct	gggctcaagc	gatcctccca	ccttggccta	ccacgcacgc	ctggccacaa	149160
cagggaattt	taaatgtaag	actacctagt	caactcttat	tctatatata	caatatagac	149220
aagaaataac	ctctaagtaa	tctctatttc	atttataatc	agattcagag	gttctcttat	149280
gctttacaat	attgtcctac	tgtgggtagc	gcaataacta	aggtaatctg	aaagaccagt	149340
tatattatat	actatagtta	aatgcatttc	aactgcattg	gagaaagcaa	ctgtgttctt	149400
tccctcctca	tttaacagaa	ggaaaattgt	caaaatttagc	ttatttagaa	tgtcctatca	149460
gagaatttatt	ttgattaaaa	tatatatttt	atcaataaaa	tatttctctt	tggctcaatac	149520
ttgtcaatat	agaataatat	ctagccacaa	aattaaaaaa	aaaacatttt	cccctatatt	149580
acattcatgg	atcttcttga	atttctgtta	tctaggtgct	tttaaaagtc	atatttctga	149640
taatatgaaa	tcacagctcc	ttttcttttg	catatttagt	tactgtatta	agaaaatgta	149700
caacacataa	tttagaatgg	gtaattatta	tattctcttt	attcttatat	tgaatatgac	149760
atgaaaatta	ccagtcttcc	caggtaatat	aatttaagtt	aaagaacatc	tacatactac	149820
aaccaatacc	cattccoccta	tgttatgttt	ggaaaaacat	agaagtatct	ttagtagtac	149880
tcttagaaat	tatcccagggt	tcagcatatt	ggtattttat	ttccagggtt	aagttacagt	149940
attttgggca	ccccagttt	aataaaactat	tccctgcaga	aacctgacaa	gtgaagttgt	150000
ggctgggaat	atgttagtct	tcagataaaa	tgaattgttt	aagaatttgc	taaagatctc	150060
aaagcatctt	tcttaaatct	aaagaaagtc	aggaacaaa	ccacaaccag	gaccatagca	150120
tcagaagatg	gaaagttgct	ttgtcttcaa	acttaaaaaa	cattttccat	tttaaaataa	150180
ttttactatt	taoctgtgat	actgttgaaa	attatgaaaa	aacagataat	ttaaaattta	150240
gtgctttttt	ttaaaaaaaa	aaaaaaagcg	aatccctggg	acacttcata	tagtgcaaaa	150300
caacaattca	agaattcaag	cattgaaaga	aataatctct	tatccccag	tctctgaaag	150360
ggattgcctt	tactactgtt	cccatcttta	tgtccatatt	tacctaaaggc	ttatctccca	150420
cttacaagtg	agaaactatt	cagtatggct	tagtcatttt	taatgcaaga	gaataggtaa	150480
aaatgccaa	caccagccag	agttttttct	ttgcagatag	atgtgactct	tacaggagca	150540
gcagggattt	cccacttttg	gcggaaagca	gcatttaggt	attccccctc	cagtgcagtt	150600
acagaccacc	cccccgtaga	agctgctcct	gtcctctgtg	gcattgtcagc	ctctgattat	150660
cttttaataa	acaatatggc	atattaagtc	tcttttatgc	ccttctttgt	attcccagggt	150720
accacctcca	tgtcaggata	acaagaattt	ggtaattgtt	gttgaataaa	tttagcagaa	150780
ggtgaaagaa	aaatcctgtt	tctacagaaa	gataccactg	gcttttgggg	agcccaggtt	150840
cttactgaaa	ctaaagaaag	ccacaaaagt	tcacctcaat	gccaaagacat	ttcttgattt	150900
ttgaaaaccc	agttgtcgaa	ccaccatct	atagaaactt	gaaagactaa	aaactatctt	150960
actctaaaca	ttttctagga	agttgattct	acaacacatt	ttgggttttcc	aatttggctt	151020
ctaataatta	tttcaaagtt	tctgtggcct	aaattttgtt	ttacattgat	cctttgaatg	151080
gactactgtt	tcacatttt	agaacattta	aaaagatatc	tacaacccga	gtctaatacat	151140
aaaaaaaatc	agacagatcc	aaaatgtgga	acattccact	aaaaaaggag	tggggagagg	151200
tctttattct	tccaaaaata	tcaatgccat	aaaagacaaa	gacggctatg	gaaatgttac	151260
agattgaagg	agactaaagt	taaatgcaag	aaaggaaaaa	atggcatata	ggacagtatt	151320
gaattgactg	acaaaactgg	attacaatag	tagagtatca	atgttaaact	tgctgaagtt	151380
gctaactgta	tttcttagga	attattcacc	taagaattta	ggcacacaga	tatgatgtat	151440
gtaagttacc	cttaaatggc	ttagaaaaaa	atgtgtgtat	attcattttac	atacgtatct	151500
acacacacgt	gtattagcgg	aagagagcaa	ggcacacatg	tgcataagtg	ataaagcaaa	151560
tgagatgaaa	tctttatttt	taaatttaat	tttghtaagtt	tcagcttttt	aaaatttttag	151620
attccgggga	tacacgtgca	gttattactt	gggtatatatt	tgtgaagctg	aggtttggac	151680
ctctaattgt	cctgttgcca	caacagtgaa	cacagtaccc	agcacgcagt	ttttcagccc	151740
ttgccccctc	cctcccgctc	tccctccttg	cttttggagt	tcccagtgct	tactgttccc	151800
atctttatgt	ccatgtgtac	ccaagactta	tctcccactt	acaagtgaga	gcattgcagta	151860
tttagttttc	tgtttctgcg	ttagttccgt	taggataaatt	gcctccagtt	acattcatgt	151920
cactgcaaa	gattttgatt	cattcttttt	aatggctgtg	tagtattcca	tgttgtatag	151980
gtaacacatt	ttcttttatcc	actcatcaat	taatgggcac	ttacattgat	ttcatgtgtt	152040

FIG. 6M2

tgctattgtg	aacgggtgctg	caatgaacat	ctgagcgcag	gtgtctttct	ggcagaatga	152100
tttattttcc	tgtgggtata	taccagtaa	tgggattgct	agctcagata	agtatttcta	152160
tttttagttg	ctctccacag	gggtagaact	aatttgcatt	cccaccaacg	gcgtgtaagt	152220
gttccctttt	ctccacggcc	tcgccaacat	acgttctttt	ctgattttta	atagtagcca	152280
ttttgaactg	gtaagagatg	gtgtctcatt	gtagtttggc	tttgcaccca	aatgagacaa	152340
aatcttaatg	acaggtgaat	ctaggtaaaa	ggcatacaga	cgttctttgt	gttgtttttt	152400
taactttacat	ttgaagttat	tttcaaata	aaaataaaa	caagcaaaaa	aaggtcattc	152460
ttcatctagt	aaactcttca	aagattacca	cccccttcaa	cagtttttcc	tggttctagt	152520
gagtcttctc	ccatttgttt	agatctttgt	tgaatgtag	tctcagataa	aaaattgtat	152580
ttttatttct	tttacaat	tcaaacaatc	taaattcttt	ttaaatgaaa	ctcattaaaa	152640
atactgcatt	tgttttctaaa	taaaatggta	gaggtaat	gcacctttcc	aaacagaagc	152700
aataggagca	acccagatgt	tctagccacg	atccaagtca	accacattca	atctaagaag	152760
taattgaagg	ctgtaacgac	ttctgtgaag	cctacaaaaa	tgagttcaga	cacaagctct	152820
gctcagtaaa	aatctagtgg	cagatgat	atacaatgat	ctgagaaaaa	ggcagaatca	152880
acaaaggttg	tattttttatc	tattgctgcg	tagcatattt	ccttaacttt	agtagcttga	152940
aacaataaac	atttattatt	tcataaagtt	tctgtggtca	gaaatccagg	agcagcttaa	153000
ctgggtggat	ctggctcagc	tgtagacaag	atgtcggctg	ggacggccat	ccttttgagg	153060
ctctgagggc	tttgagggct	gcacgatcca	attgcaagg	ggctcactca	catactaggc	153120
aagttactgc	tgggtgctgg	gaggagacct	tagtttctta	tcacatggac	ctctccacag	153180
ggctgctgga	atgtcctcat	gaccttcccc	atagttagta	ttccaagaca	ggaaagtggg	153240
agccacaatg	cttttcatga	cctagcctca	aaagtgcatt	actgtcattt	acacaatatt	153300
ctactggctg	tacaagttaa	tcttatttag	tctgggagg	gactgcataa	gggcattagt	153360
aacaagaggc	aagaatcctt	ggggggccatc	ttggaagctg	gctacacaga	agagaaaaca	153420
ccaggggagt	gcgaagaagg	tgcaattaaa	ctcaattcct	tggtatgcca	atggtaagaa	153480
atattaggtg	atctctgggg	tgtaaccttt	ttaatttagt	tcttccactga	ataatctggc	153540
cagtaattgt	aatacaaaa	acggcactct	gacaatat	tctcccttta	taatcaatta	153600
cacaccagaa	tatatataaa	gaaagactta	caaagtcaca	agtaattggt	tggtattatt	153660
tttataatca	catactagg	ccctacaatt	agcattcaca	aacatcactc	catggtggcc	153720
agataagtct	gtcttttatag	tggtttacca	tacgcgcctt	agcatgaagt	tacatgtgg	153780
ttccttagcc	atcagatgct	ccaaatgcaa	aaaatgtctc	accacagtca	cagaatcatg	153840
gaatcctaaa	gttacctggg	gtttctgaaa	atctcatggg	aacaactcac	gagaattaag	153900
gcttaagaaa	gtgattttatc	aaagaacaaa	accagcaaga	ccttgagtta	gaactcgcag	153960
cagagttgtg	actagaacct	gttgaaatag	gcaatgtaga	aaccagact	aaggcacatt	154020
ctctacaact	ttactatgca	agtatgctta	gatactcctt	agcaaacagc	aggccttgag	154080
taaattcttt	cagaactgaa	tacacaaagg	atacagaacg	gaatacacta	acaatagtgc	154140
atgatgtgct	catttctgta	atagaaatga	attaattctg	atccatctat	aatttattat	154200
tgctccatga	ttaacggaag	gcataggaaa	gatgactgga	atagtgtaac	tagtacaaac	154260
aagtattaca	cttgactgaa	cctcattaca	ctgcaattgc	atattatata	gtatgtagg	154320
gaacaaatac	tgggttagtc	agtggacctc	catttgaata	ctgggtctgc	tcttagaac	154380
ctgtatgatt	tgaatgactt	ctttatactt	tcatagtttc	tctgttcttc	tctgttaaac	154440
aaaggcttag	aagatattat	gggttagatt	atgcccctta	caaaagatgc	tgaagtccta	154500
aactacaata	cctgtgaatg	tgactttatt	tggaaatagg	gtcctttgcaa	gtgataaaga	154560
agaggtcatg	gagtgcacta	atccaatacg	accagtgtcc	ttataaaaaa	aaggaaat	154620
ggatacacat	acacacaac	aaggagaata	tcaaattgaac	atgaaggcag	agaccggggc	154680
ggtagactca	caagccaagg	gacaccaaag	attttcagca	aatcaccaga	agttagggaag	154740
agtcatggga	cagggttctca	cagtcctcag	aagaaaccca	ccatgtcaat	acatcatttt	154800
ggacttctag	gcgtcagaac	cgtaagaaaa	taaatttctg	ttgttcaagc	tacccaattt	154860
gtggtaactt	tgtacagcaa	gcctagccaa	ctaatacaaa	ttaactotta	acacttgtgt	154920
gaaatagggt	tatgctatgg	aaagcttcca	attgttgggg	aagatttctc	atacttaacc	154980
tgttaccnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	155040
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	155100
atcagtat	tcacctttct	catgtcagtt	gactttgcca	tctccttcat	ggaaaaagat	155160
tgggaagatt	tctcatactc	aactgtttac	agtataccac	aagcctgtca	gttgaagata	155220
caaacagacc	ctctataatc	ctctatactt	atatgcaagg	aacagcacac	tttttctgca	155280
aaaggctcaga	tagtaaacat	tttaggcttt	gtggggccaaa	caagggttct	gttacatttt	155340
ttttttataa	atgtataaaa	caccctcatc	ccaacggact	caagcctcct	acaggaacag	155400
acctcaggtc	acatttgact	catagcctga	cccctgggtg	gtagggttaa	caagcctcct	155460
ttccctgggc	tcctttttct	ttcagcattc	caagccaaag	gaaactatct	ttttcaaatc	155520
atcttctctc	ctaggtggga	catcttacac	cagcccaggc	atgcttccga	tagccttaga	155580
gtagctgtcc	cttctcaga	attactgtct	aattggctag	aagttagcaa	ctttttacat	155640
ttttctctca	attcctttcc	attaagaaga	agggcattgc	cggcaaatta	cttgtgacta	155700
tcaatgacat	actctcagaa	gcaccagtag	cctgtgtgtg	tttctaataa	cattcttaata	155760
gacacatacc	ccaaggttat	gctgtttgtc	atctcaca	atgacttaca	tctagagatt	155820
taaataatta	atgtactttt	cataactacc	aggtacagta	gatctgataa	tgccagagct	155880
aagcacatat	acagaaagta	gggcaagggc	cagagactca	ttttaaagca	atgtttacaag	155940

FIG. 6N2

atcgctactg	ttgcttttca	tttttctaaa	tgtggccact	gctgttttct	cactaaagga	156000
aatgttttat	gtaaagtga	taacagtacc	tggcataaaa	taagtgtc	ataaatgtta	156060
aggccttctc	tccctcttca	actggcctcc	tcatttttca	caaagtga	tagaaaaaca	156120
acatggaaga	taatcctggt	gcttaggaaa	aataactaaa	gcttgctaga	caaaatacac	156180
ctgaaaatat	aggaagtga	ctatagctgg	cctatatgca	tgtatgttgg	aacaggacaa	156240
gatatgttag	ggtgggggtga	agaggacaga	gaaatggaag	gaaaggggct	acagccttgg	156300
tggcaaaata	aaggataaga	cgactctttt	aaaatggtct	atttcaaagt	ctgggttgtg	156360
aaacttaatt	tgattacttc	atgagaaaca	gcactctataa	tccatccctg	atttttctac	156420
aacaaaaatt	tattatttat	tttatgtttg	tgtgtagatc	ttttatatat	atacatgtac	156480
acacgtatat	gtatatatta	tatatgcata	tgcataatata	tgtgtatatata	catatataat	156540
atatttgtgtg	tgtatgtgtg	tgtatatata	atttttttaa	aggaatgggg	tctcactatg	156600
ttgcccaggc	tggacttgaa	ctcctgggct	caagcaatcc	tccacctcag	cctcccaagt	156660
agcaaccaac	agtttttagtt	ttgaaaaaat	aacaaatatt	aaacacccat	gtgtaagggt	156720
tgggtactggg	ccctgtgtta	gtttgcatgg	gctgtcgtaa	cgtaacacta	caggccgggc	156780
acaacggctc	acgcctgtaa	tcccagttact	ttatgaggcc	aaggtgggcg	gatcacctga	156840
ggtcaggagt	ttgagaccag	tctgaccaac	atggagaaaac	cccgctctcta	ctaaaaatac	156900
aaaattagcc	atgtgtgggtg	gctcatgcct	gtaatcccgag	ctacttggga	gactgaggca	156960
ggagaatcgc	ttgaacctgg	gaggcggagg	ttgtgatgag	ctgagatcag	gccattgtac	157020
tccagcctgg	gcaacaagag	caaaactctg	tctcaaaaac	aaaaaaacaa	aaacaaaaaa	157080
accctgataa	cactacagac	tgggtagctg	gaccaacaga	aattttat	ctcacagttc	157140
tggaggctgg	aaatctaaga	ttaaagttgtt	ggctgggtttg	gtttctgagg	cctctctcct	157200
taacttgcag	atggctgctt	tcttgaaatg	tcttcacata	gctgtccctc	tgtctgtttc	157260
tgggtgtctcc	ccacgtatcc	aaatttctctc	ttcttataaaa	gatactagtc	atattggatt	157320
agggtccacc	ataaagacct	cattttaaact	taatcacctt	tttacggccc	tgtgtccaaa	157380
tacagtcaca	ttccgagttc	caggggatta	gggcttcaac	ctatgaattg	gggggtggggc	157440
acaattcagc	ccgtaacagg	cctagacctt	aattttgtcaa	cactacagtt	agatttatag	157500
tatagtaact	gcntctgtgc	tcactctaaat	gtcatatccca	aatgaaataa	tatagcatga	157560
tgatctgaat	ttattaaagg	caatttttcc	tatagaaaac	caaactctata	aattatatac	157620
aaactgtgggt	aagttactcg	ataccttgcc	aggactcatc	tatgggtggt	gatagaccac	157680
aaagagtacc	actgaaagat	cccttttctta	atcacagttt	cctcactggc	ttgccacaaa	157740
acctaaaatt	cttctattct	ttcattggca	atttattttcc	cctgaaaatg	taataaatct	157800
ctggcagagc	aatctattaa	gtgatcatca	gccactaaca	ccttagggta	gaacagctca	157860
gatcacagtc	ttaaaataaa	ttccatcagt	atgaaatttt	ctttattact	gctccgctac	157920
tgggaatgta	gatcactgtc	tgcttttaata	ataattctgg	tgtagggtcat	tcaaattttg	157980
tttaagataa	taagacaaat	agcagggtata	aaaacattcc	gtcatctaat	aaagcaacc	158040
gagaacagta	agaagaacgt	gatgaaatta	acatttttga	gtacctgcta	ggaatcaagt	158100
attctgctag	atatttttaga	aatcatctca	attcaatcct	aaaaattatt	ctgtataata	158160
gtatagggtt	agtattccta	atccaaaaat	ctgaagcttt	ttttttcctg	agacggaggt	158220
ttgctcttgt	tgaccaggct	ggagtgcaat	ggcgcaatcc	tgactcactg	caacctccgc	158280
ctcctgggtt	caagtgatta	gggatactca	actggctaaa	tataatgcaa	atattttcaaa	158340
atctgaaaaa	acccaaatct	gaaacacttc	tgggtcccaa	catttcaggc	aagggaacct	158400
caagttgtat	taatcccat	ttacagaaga	agaaacaggc	tcagataaat	gaacatctca	158460
gagcttggtt	atagcaaagg	agagattgaa	actgtcaggc	ctctgatccc	aagccaagcc	158520
atcacttccc	ctgtgacttg	catgtatata	tcagatggc	ctgaagtaac	tgaagatcca	158580
caaaagaagt	aaaaataacc	ttaactaatg	accattctacc	actgtgattt	gtttctgccc	158640
cacctcact	gatcaatgta	ctttgtaatc	tccgccaccc	ttagaagggt	tctttataat	158700
ttccccacc	cttaagaagg	ttctttgtaa	ttctccccac	ccttgagaat	gtaatttgtg	158760
agatccaccg	ctgcccgcga	aacattgctc	ttactttcac	cacctatccc	aaaacctata	158820
agaagtaatg	ataatccacc	accctttgct	gactctcttt	tctgactcag	cccgctcgca	158880
cccagggtga	ataaatagcc	atgttgctca	cacaaagcct	gtttgggtgtc	tcttcacatg	158940
gacacgcagt	aaagaaaccc	tacctgggtc	tgtgtcttac	ctggtggggg	cctgtgggtca	159000
aactactagt	acggagtttt	agtgtcctca	ctttaaaaat	gaggggttgtg	gccggggcgcg	159060
gtggctcacg	cctgtaatcc	cagcactttg	ggaggccgag	gcggggcgat	cacgagggtca	159120
agagatcgag	accatcccgg	ctaaaacggg	gaaaccccg	ctctactaaa	aatacaaaaa	159180
aattagccgg	gcgtagtggc	gggcgcctgt	agtcccagct	acttgggagg	ctgaggcagg	159240
agaatggcgt	gaacccggga	ggcggagctt	gcagtgaagc	gagatcccg	cactgcactg	159300
cagcctgggc	gacagagcga	gactccgtct	caaaaaaaaa	aaaaaaaaaa	aaaaaaaaaa	159360
aaaaaaaaaa	aaaatgaggg	ttgtaaggta	actacctact	ttttatagca	ttgtagtga	159420
gttgaaatga	attaatccac	atatattata	gtgtggtaga	atgcagcaga	actgatgatg	159480
tatgacttct	aagactagtc	cttaagagac	ctgcagtttt	tgcttttgcc	ctcttggaac	159540
actcctgttg	ccatgttaag	aaaaactctg	gggagactat	gaaggaagag	agcatactcg	159600
gggcaggggg	gtgaacagga	cgtgcacatg	tacagcgcta	caagccagggt	gacaccagta	159660
ccacagcctc	agacatgtca	ccgggggatac	cagcaccaca	gcctcagaca	tgtcaccggg	159720
gacaccagca	ccacagcctc	agacatgtca	ccgggggacac	cagcaccacg	gcctcagaca	159780
tgtcaccag	ggacaccagc	accagcacca	cagcctcaga	catgtcatcg	gggacaccag	159840

FIG. 602

ccccatgggtc	tcagacatgt	ccttgaggcc	cacttagacc	cttcaacccc	agcccagctg	159900
ctaactgact	acagccacat	gaacagaacc	aggtgagacc	agaggaaact	tccagtcacc	159960
taccagatca	tgacaaataa	taaacgatgt	tttttaaacc	acaaagattt	ggagcagcat	160020
ttgttacaca	aaatttagaca	actattacag	ttcgactaaa	aacatgttca	tttacaatac	160080
taaattagaa	gtgtaagaat	gggagaaaaa	cttcatactt	taaaagtcac	tttttcctcc	160140
aaaaacttcc	aactttgaaa	aactgatattt	tataatgcat	aaaaattaaa	ataaccttag	160200
aatttatatg	agtagcatag	ccagctggct	ttattatctg	ttgtactcaa	cacttcaata	160260
atcactgatg	ttttagaact	cttcagattt	agaactcttg	cccttgcttt	agtctggttt	160320
aagctaaata	attgttcttc	ctcaagaaca	aatgacctta	cctcgttttg	ttttccttgt	160380
ctgagagaaa	cacattagca	gtctcccatc	ttgtttttcc	ttttcctgtc	acccaggaca	160440
gagggcagtg	gtgtgatcac	agctctgcag	cacgacttcc	ccagggttcag	gtgatccctc	160500
cacctcagcc	tcccaaggag	ctgggaccac	aggcacatgc	caccacgtcc	agcttaattt	160560
tgtatttttt	tggtagagat	caggttttgc	cttattgccc	caagctgatc	ttgaattcct	160620
gggctgaagc	aatctgcctg	ccctggcctc	tccaagtgtt	aggattacag	gtataagcca	160680
ccgtgcagcc	ttatatattt	ttttaaattt	tccctctgtat	ttttctctct	ggcaaattgt	160740
ttagggagtt	tctttagttt	atcagactaa	atttcaaggc	tttccttcca	attttgacat	160800
gtaaacagtc	cttcatttct	gcttatctag	tgattattcc	caaactctgt	tttacagctc	160860
agctgtctct	cctgagatta	agacttgttt	ctctaactac	ctgacggcag	aatctcctct	160920
tggaagtatc	aaggaggcag	ttcaaaactg	aactgggcat	tggctccact	ccttctcctt	160980
ctctttacta	ttaataccct	ttctctcctt	ctatatgacc	acactaagtc	ttatttaggc	161040
atcgtttctt	ctgggagacc	tttgtagaat	ctctgaggtt	atgttaacat	gctaaggttt	161100
tcttgacatt	ctcagattgg	gttaggtgaa	cttttagcaa	cttatctttt	tactaaaaag	161160
tcctccctca	gtatctgtgg	ggaattgggt	ctaggactcc	ctaaggatat	caaaatctgc	161220
atgagcagcc	caggtgagac	cagcagaagc	actttacagt	cacctacagg	atcatgacaa	161280
ataataaatc	atgtttaagc	cacaaagtcc	tttacataaa	atggtatagt	atttgcatat	161340
aacctacaca	tcttcctgta	tcctttaaat	catctctagt	ttataatacc	tcatacgatg	161400
aaaatactac	gtaaatagtt	gttatactgt	attgtttagg	gaataatgac	aaggaaaaaa	161460
gtccacgcgt	gttcagaata	gatgcttttt	ttctctgtct	aatattatgg	atcccacagt	161520
ggttgaatcc	acagatgtgg	aatccatgga	taccaaggaa	cgactgtatg	catttttgaca	161580
attatacttc	tcactctacc	atgcattcaa	caaacagAAC	atgtaaagcg	gtgataatgc	161640
tgtgatgaaa	aataaagcag	gggaagaggc	tgcatccatc	tagtggaaac	gatgcccttt	161700
tcaatctgca	caaagagaaa	aagctgctct	ccaagttggg	gggtgggtgg	gtcaggtatg	161760
taaatttggtc	aggaagggat	ctgtaggcac	ttacagattt	gacgctaagt	agatgggaag	161820
ccacaggaag	gttgtgaaga	aaagacaaga	catgatctga	ttcatgtttt	gatctgatac	161880
actggttgct	agatggagaa	taagctgcat	ggcggtgaga	ggaagcagaa	acaataggag	161940
ggtaatgcta	taatccagtg	gtccataatc	caatatcccc	ccaaggaaca	gttcggcaat	162000
gtctggtgac	atttctggct	gtcacaaact	ttggggcgga	gtgctacttg	catctagcag	162060
gtagaagcta	gggatgctac	taaacatcct	acaatgcaca	agacagccct	tcccccaaca	162120
ttgtctggcc	aaaacgttga	tagtaccaag	gctgagaAAC	tctgtttata	tctgtattag	162180
aatgtagctt	ggatttagat	ggcagtggtg	agagctggag	aagtgccttag	cttcccaatg	162240
tttttttggtt	tgtttggttt	tgagacggag	tctcgctctg	tcgcccgggc	tggagtgcag	162300
tggcgtgatc	tccgctcact	gcaagctctg	cctcctgggt	tcacgccatt	ctcccacctc	162360
agcctcccga	gtagctggga	ctacgggcgc	gtgccaccac	acccagctaa	tttttttgta	162420
ttttttagtag	agacagggtt	tcaccatggt	agccaggatg	gtctccatct	cctgatcccc	162480
tgatccacc	acctcggcct	cccaaagtgc	tgggattgca	ggcgtgagcc	accgcgcccg	162540
gcctgaatgt	ttttaaagta	ctggtgacca	tattcgctga	gggattaaat	gtaaggatag	162600
aggggaaaat	aggaatcaga	caccagggtt	tactgcctga	gcaatgagaa	gaacgacgtt	162660
cctcatacgg	agatgaggaa	gaatgtggaa	tagcaggtaa	atagcatgtg	cttgctttgt	162720
ttggggctgt	gcagaagaga	ctgatgggac	caacgtgctc	agttctggat	atattaaact	162780
tggaaatgcct	atttggcacc	aagtgaatgt	atcaggtagg	cagatggata	aatgagctg	162840
aagttcaggg	gagaggctgg	ggtggcaata	tgaacttggg	agtctccaca	tctgaatagt	162900
attttaaagct	atacaacagg	ataaggatg	ttaggaacta	aacacaaatt	gagacgagat	162960
ccgagcccag	aggcactccg	atgtttaaaa	aagaggagga	accatcaaaa	gatactaagg	163020
agaagccaag	aagtaggaga	actgagagtc	tgagagaatc	attatactca	tttgatcgac	163080
tgcaacaaat	gctgcttaga	ggtcaagcaa	aatgaggact	aagcaaggac	caccaggctc	163140
ggcaacatgg	aggccaatgc	cgacgtggaa	atgagagttt	tggtgggaag	acaggaataa	163200
aagtcctaca	ggctgtaatt	caagagagag	aacagcagaa	gaagggtaga	ggtggtagcc	163260
ataaacaatg	atacattctc	ttgaggcctt	ttcttgcaaa	gctcagtga	gaaacatgg	163320
tccagagagg	gatttttttt	tctctcattt	tacatatgca	aacatataaa	aaagctgaaa	163380
gaattgtttg	acaaccaccc	ttattcttac	cacagattca	acatttaaat	ccatattgtt	163440
tccctgtatg	tactgtgtat	tgtttgagga	taacttcccc	tctaaatata	cctcggatgt	163500
atctctctaa	ataagtcctat	tctcctacat	agccatagta	accatgaaca	cacctagaa	163560
aattaaaaat	atattctcaa	atatattata	tagctgggta	tattacaatt	tccccaatat	163620
gtgatttgca	aaccaggatc	aagtcaaagt	ccatgcacag	catttggttg	tcatgtgtct	163680
ttgggtctcta	ttaataatga	tgactgtttg	aaaagacctg	tcctatagaa	taaatttgac	163740

FIG. 6P2

tgattatgtc	atgccattga	acttggtttt	ctattctaga	aggatagttt	tttagggtag	163800
tgaatacatt	tattactctt	ggcacaaatag	tctaacattt	cccaatttcc	ttatatctct	163860
gccctttcoat	tttcagaaaa	tcaattatct	caagatttgt	ttttcattta	tcatcactta	163920
ttagctctga	agactcaact	gagcaacttt	caggggtttat	ataccctata	ttcagaaaaa	163980
aactactacc	atctctcatt	taccctaaga	attcatagga	gagcatgtct	taaagctgat	164040
caataaccaa	accaaaat	ttattgatca	tattacattt	ggaaagcaaa	atgaatttcc	164100
taaaatttct	tccctgatta	gcaaaatagt	gcctccgaac	acttgagggt	gaaagttgtt	164160
gtcaaataatg	cctacatgac	tggaaattat	gacatccaaa	tgagttcact	gggtctgata	164220
ataatatgct	ctacatgctt	atgtctatgt	aataaacagc	ttacatctgg	atgagaaaaat	164280
tgattatata	aataatttggg	cttctacaac	tggtcactca	tctgtaagta	cttaaagcaa	164340
cttaaaatgc	aaactgacct	aacaatgctt	atggttagaa	ttccaaagaa	tgtttaggca	164400
ttgtcagggt	atgttaaaac	atcttctgcc	acaatcttca	agtgatttat	cttttctggt	164460
gtgttgaaata	gctatagaag	acaaatgaat	tctgcactcc	tgaattcaat	gaacatttca	164520
agtttctctca	cttacactgt	aagattacgt	agcataattt	aagaaataaa	ttataatcat	164580
tttatttccac	ttattgaact	tcttttaagc	tttggcatta	gaattttaat	caaagcactg	164640
ccacttgctt	acagtgatgg	tttttaggct	ctttgggctt	atggactatt	tcaatgacct	164700
tcactagcca	tctagtccac	cttatcctaa	ttattaccac	tgcaaaagaa	acctcactt	164760
gaataaaatca	gtagatgggc	atgaggcacc	tccaggagga	ctataattat	taactcatac	164820
taaaatcaaaa	attgtagcta	ttatcactca	tatggttttg	ctctgtgtct	ccacccaaat	164880
ctcatcttga	attgtaatcc	ccacgtgtca	aaggagaagc	ctggtgcgaa	aggactggat	164940
catggggggcg	gccttcccc	ttgctgttct	tgtgaaagag	ttctccgatg	gtttaaacgc	165000
atgggacttc	ctcctacttg	ctcgctctct	tctgccacca	tgtaagatgt	gccttgcttc	165060
ccctttgcct	tctgccatga	ttttaagttt	cctgaggcct	ccccagccat	gcagaaatgt	165120
gagtcgaatta	aacctctttt	ctttgtaaat	taccagctct	caggtagttc	tttacagcag	165180
tgtgaaaata	gactaatata	atcaccttat	ggtaagtctg	tctataaatc	acctgaactt	165240
tcacagacta	tctagaagaa	catgtaacca	gagtagttct	tgatcatgct	atataaatta	165300
ctgatacaga	aatagagcta	gacaggaagg	ggctggtagt	agagaatcat	cctctggaca	165360
tattctcaca	gcctaactct	tagctagcaa	attttataat	atatataaaa	atacaattat	165420
ttcacaaaat	taccatgaaa	cgatttttatt	gggatatttag	acattactga	attacttggt	165480
ctgtgaggta	tacagtgaaa	ttaacatggt	ataaaattgt	ggtagccggc	ccccaagatg	165540
gcctccaatg	aatccttcac	ctcttggtat	tcataccttt	gtgtaggtag	gtctgtgtaa	165600
cccatagaat	acagcacagt	gacagttagt	cacttccgag	gttaggttgt	gaaagacact	165660
gtggtttctg	cctctctctc	agatcacgtg	ctctggggga	aaagccaggt	gtcattttgt	165720
gaagacactc	aagcagcctt	tagatgactc	caaccacata	agaggctccg	aactggagcc	165780
actcagctaa	accactccca	gattcctgac	ctgtatcat	ttcatcacaca	atgtatgaaa	165840
tgacaaatgt	ctgttggtttt	aagctgtttg	gggaataatt	tgttacataa	caaaatataa	165900
ctaatacaat	aatacatact	gatttaactg	aagtgtgaac	ttcataactt	atttaggtac	165960
taaaaatcac	agcaacccga	tgcaaagtac	taaaaaaaa	atccattaat	acctattgag	166020
tactgttgag	ggcatgagga	aagctctttc	atactccaca	taaaacttcc	ttaccgtaat	166080
attcatggct	gacctctact	cttaactcct	ttctaggata	ggaggggcta	actgatctga	166140
cagcaagttt	gggagaaaaa	attctgaggc	toggccaact	tcctctcttc	tttccatttg	166200
ggatttggt	gactgaagag	ggtcatttgt	tttggcctgc	tctcttacac	agtaaagtga	166260
gtgggacaag	ctctattctt	gttgatagaa	aaactcgaat	tttaaactctg	cctagttctt	166320
tgacagctcg	tgttgctcca	aatctcagct	accttttgaa	acaacttttt	tcagtaaaact	166380
taatttcaat	cttcatgtga	tttaactgga	tccaaacaca	ggcagataaa	aaaggtgggg	166440
cattacttat	caactcttaa	actaagttta	attttctgcc	ctcatggagt	ttatagtata	166500
tttgagggtt	aaaactaaaac	acctgggttt	aaacagaaac	tataaaaaac	acgattaata	166560
ggtgaggccg	ggcgcgccgg	ctcacgcctg	taatcccagc	acttggggag	gccaaggcgg	166620
gtggatcacg	aggtcaggag	atcaagacca	tcttggtcaa	cacggtgtga	aaccccgctt	166680
ctactaaaaa	tacaaaaaat	tagcccgccg	tagtgggtggg	agcctgtagt	cccagctact	166740
caggacgctg	aggcaggaga	atggcgtgaa	cccggaaggc	ggagcttgca	gtgagccatt	166800
ggccactctg	actccagcct	gggtgacaga	gccagactcc	gtctcaaaaa	aacaaacaaa	166860
caaaaaacaa	ataggtgaaa	ggccgtgata	attggtaagc	gtaagaaaat	ctgaggggaga	166920
aaaaaatata	gatgccagag	ccccatgcca	aactcatgga	atcatgcatg	aaacccaagc	166980
agctgcagtt	ttaacaagtt	cccaatatat	agttgacccc	tgaacaatgc	aggtttgaac	167040
tgccctgggtc	cacttataaa	atggatttga	tttttttcaa	taaaagttac	accgagtgtg	167100
cctgcctctc	ctccctccct	ccctacatgc	tctgctctct	aagcctctgc	catgaggctt	167160
aagacagcaa	gaacaaaccg	tcctgtttat	ttcaattagt	ttgggggggtg	cagggtgggtt	167220
ttgggttacat	ggataagttc	tttagtggtg	atttctgaga	tttttagtgca	actgtcacct	167280
gagcagtgta	cactgtatcc	aacatgtagt	cttttaaccc	ccatccaacc	ttcttcccca	167340
accggaatcc	ccaaagtcca	ctgtatgatt	cttatgcctc	tgtgttttta	tagcttagct	167400
cccactttta	agtgagaaca	taccattttt	ggttttccat	tcctgagcta	cttcacttag	167460
aatactggcc	tccagctcca	tccaaattgc	tgcaaaagat	attatttctg	tcctttgtat	167520
ggatgaatag	tattccacga	tgtacataaa	cattttcttt	atccactcag	ctcctcttca	167580
gtctactcaa	tgtgaagggtg	acaaggacga	agatctttat	gatgatccat	ttccacttaa	167640

FIG. 6Q2

tgattagtaa	atatacttac	ttttccttat	gattttctta	gtaacttttt	ttctctaact	167700
tactttattg	taagaataca	gtatataaca	catatgacat	acaaaatag	ttagtcaaca	167760
atatatgcta	tcagtaaact	tccagtcato	agtgggctat	tagcagctac	gttttttggg	167820
cagtcaaaag	catggggaag	gagaggggtg	tcocaaaccc	ctgtgttgct	caaggggtcaa	167880
ttgtaataaat	acccatttaa	gaatccatgg	tatatatggg	aagtgcaca	actctagaag	167940
agagtgcctag	gagttggaaa	aggaaagaga	aaacagaatt	taaagcaatc	tgtaaaggac	168000
atgcaggggt	tagatgaggt	ggaaggggtg	gggaaaacca	acatctgctg	tgagggcata	168060
ttactgcca	gacattgttc	tatgtccttac	ctcattttaag	agaatttcat	ttcacacatg	168120
gaaaaactga	agcccagaga	ggttaaataa	tttgccctgag	gccaaaatta	gttaaataaac	168180
agaagtggga	ttagtagatg	ttttcatttt	atcagtga	ctgagcctca	gggagggttaa	168240
atatttttga	tgaagtaaca	aaactgagat	tatatatggg	ccaagttaa	atgagatctg	168300
taaatcta	gcctacacta	aaacaaaaaa	aaaaaagtg	gaagaaaagg	tctatattgc	168360
ttagcaaaac	agaggtaggg	aagcaaaaat	aaacttacaa	aatcagatta	gaccaccaa	168420
aaacagtccc	cattttaact	tatgtggtga	gaacatata	ttaaagacca	ccagtggctt	168480
aaaaatcttt	ttaaaaaatg	aatctgtttt	cattattcat	tagtttttat	ctaatagaata	168540
atgtatctta	actgatacat	ttactaaaca	attaccagct	ccaattagca	ctcagttaca	168600
attcaatcat	taaaactgacc	ctcaatttag	ctgtcaacct	agtcaaaaca	gttaagtgat	168660
tttacgggtca	tcctcagttg	cagaagtata	atgtttatgg	ctggagtcac	tttattttta	168720
actaacatttt	tttaaaaaga	ttgcttttga	acaatgtgtt	atgagtcctt	tgtgggtaaat	168780
actgcttttt	ttttgagacg	cagtctcgct	ttattgccc	ggctggagtg	cagtgggtgcg	168840
atcttggatc	tgaggctcct	gcctcagcct	cctgagtagc	tgggactaca	ggcatgcgc	168900
aacgtgcccc	tgttaatttt	tgttttttta	gtagagatgg	ggtttcacca	tgtggcgag	168960
gctgggtctcg	aactcctgac	ctcgtgatct	gccacacctg	gccttcocaa	gtgctgggat	169020
tacagctatt	ttaaggactt	tttaaaaagt	gaagctaaac	atattattcat	ccctattcct	169080
catctatagg	gacttgtgct	ctatttttct	ttgaagactg	aagtaaaaat	tcacctttgt	169140
gagggctctc	ctataattaa	aattaatcat	tttttcctcc	atagcttcta	caaaacattg	169200
ccgtgtacaac	tctatttagc	acttatttca	tcccgccttg	tatgaaaact	athtgtttac	169260
aaacgtttct	acttctcttt	aggaataaag	actatgcatt	attcactggt	gtattctccc	169320
tgcattttatg	gcagtccttt	gcacattaaa	tacaagcttt	ttggctctgt	gcactctctc	169380
atctggctgt	tcactctgtac	cctttaaaac	atcctttatt	aaaaaaacag	taaatgtaaa	169440
aaaaaaaaaa	agccattgat	gaaaaagtta	atagctttct	caataagaaa	agagtatcaa	169500
ttatgcatac	gtctgaacta	acaaacatga	atgaaatagg	ctattttaata	cattctgttt	169560
taaaagtagg	tttggtcagc	catgtaaatt	gaaaattggg	agccaccaag	ataactcatc	169620
aacaaatatg	cactatgtac	taggcactat	atagatgatg	gtgaaccaaa	cagatgta	169680
ccttgctctt	acagatctca	caacctaact	tggggccaaa	aatatatgtg	tatgtgtgtg	169740
tgttatacat	atatacacac	acatacatgt	atatatacat	atacacatac	acataatac	169800
atacgcacac	atacacatat	atacacacac	atacatatgc	tatgaggaaa	acaaacaggt	169860
ggtgagaaag	aattagagta	ggggtagagg	acagagggct	cctcaaatag	ggtggacagc	169920
ttgacacaag	acactcgagc	taagactcca	aggatgagaa	gacagttatg	taaagaaaag	169980
gggactagca	ttgtcagcag	gtagctaagg	ccttaaagca	gacagtcacg	tgctgcaatg	170040
ccagcttcaa	gcgaatacag	ttactaaagc	atatctaacc	ttctatgtga	atgtagttag	170100
taaagcatat	cctcdaactt	tccatttttt	ttttgctatt	gtttctacca	cttctccttt	170160
tctgttgaca	attatttttaa	athtcctggc	taaatttaaa	gatggcatga	actctgggga	170220
aagtaagact	acctaagtcc	aaataatcct	aaattccttc	tagtcccttat	gactgatcaa	170280
ttcaccctga	agtgcacaact	atgtoccaat	taggaaagag	tgtttcttta	tctgcactta	170340
athtttttgat	ttggaggctt	cctgattgct	aatcaacatg	ttgtgtgatt	acttcaacaa	170400
gtacttatag	aacgttatht	tgtcactgga	aaaacgttct	gctgctttct	gaactttagg	170460
ttgctctaga	gtctaggaag	agtgactgta	cctaaagcag	ttcctaatta	ctggacattc	170520
tcagatctgc	tagagctaca	tgtccaatta	cgagaatata	ctggaaaaag	ccctggatta	170580
gaaatgagag	gatgtagggt	ttagtaccag	gtcagccacc	ttgttaatgc	aaatttgagt	170640
aaattgttac	ttctttttagg	ccttggtttt	gctgttttgt	ttttctgaca	gtatgggtctc	170700
tgtgggtccag	gctggagtg	agaggcacaa	tatcaggtcc	ctgcagtctc	tacctccag	170760
gatcaagcca	ttttcatgcc	tcactcctct	gagttagctg	gattacaggc	atgtgccacc	170820
acaccctcga	actcctgacc	tcaagtgatc	tgttgccctc	agcctcccaa	agtgctggga	170880
ttagagggtg	gagccactgt	gcctagcctt	acacattggt	ttcttactgg	taaagtggga	170940
atatctagaa	gttgcatgct	acataaaatt	aacctatat	tattggcaaa	aaatttttaa	171000
gaaaaacatc	agcttaagag	tactaattga	gtacatgcct	tggaaatgag	atgagcttga	171060
aagaacaaac	ctgttggttac	atcactcatt	gctgttttca	tatgctgctc	attgtaaatc	171120
ttgctcagtg	gcatgatttt	agtgttttaa	gatttathtg	tttgtttgtt	taggacaaag	171180
tctctacaca	taatctactt	gcttcatata	tacatactta	tgcatattat	gtatgtacat	171240
acatgctctc	agggctcaca	tgaaaaaaca	gccattcagg	tgatgtgatt	tatctcatat	171300
gcttacttta	ggtgttgact	ccactataca	cacttatcag	atactggcat	ggagaacaca	171360
taagtcaaag	tagacaggac	ccagccgtac	cattggctag	ggcacaata	tattcacata	171420
tgtggagaat	gatgtacgta	gaaaggtctt	cattgcacaa	tgctctttta	taaagatctg	171480
gaaaaaaaaa	acacctaaat	gttcaaaagg	atagggtaga	tgaaataatg	gtacattata	171540

FIG. 6R2

aaatggaaga	ttatgcagcc	ataaaaaataa	ggaaataacct	taaataataa	cagaacaact	171600
tttaaggttaa	gtgaacaaat	aaggtacata	atcactatgc	atagtatgta	ccattttacat	171660
agaaaaaggg	aagaaaaata	aaatatatat	agtaatttat	ttgttcttac	atgtgtaaaa	171720
tttttctgaa	aaatatacca	gaaactggta	gcactgggtg	cttcctaggc	agaaaaatgac	171780
tgagtatcct	tttgtacctt	ttgaattttg	aaccacgtga	atgaatgtgt	tacctatgaa	171840
caaaatgaca	agtttagatc	agcaagacag	cagtttgaga	tgaaatggga	ttacaccctt	171900
agtaggaaaa	acttttttaa	gcagggtgga	cttctaagag	caaataacctg	cacatggaat	171960
gttgaaacta	taaggaaactc	tctttaagag	atccatctat	tccaaacttc	tcatttttata	172020
gatctgtaaa	ctgagacctt	aaaaattcag	tgacttgcac	aagggtcacac	agcagaagag	172080
atgggattag	atgctagata	ttccaatatc	aagtttagac	tattaaaaat	tcagtgcactt	172140
gtgtaaggtc	acacagcaga	agagatggga	ttagatgtca	gatattccag	tatcaacttt	172200
agactattat	cacaccatct	tctcattttc	tgggggcaaa	acagaaccaa	gtaagttttg	172260
gctacattac	gagttgtcat	gtttttgttt	ttgttttttt	gagatggagt	cttgctctgt	172320
cgctcaggct	ggagtgcagt	ggtgtaatct	cagctcattg	caatctctga	cccccggtt	172380
tcaagcaatt	ctccctgcct	tagcctcccc	agtagctggg	tttacaggcg	cctcccaccg	172440
cgcccggtta	atttttgtat	tttttttttt	tttttttagt	agagacgggg	tttcaccatc	172500
ttggccaggc	tggctctgaa	ctcctgcact	cgtgatccac	ccacctcagc	ctcccaaaat	172560
gctgggatta	cagggtgtgag	ccaccacgcc	cggccgagtt	gtcatgtttt	atctaaaatt	172620
tagagtctaa	tgtataaatt	aaccttaagc	cctgaaacta	ctaatttctt	gtttggatca	172680
ctatacggct	acacttaaaa	atatgctgtg	catacctcta	tcattgcacg	tatacaatat	172740
gatagatgca	tgatatgaca	gacacacaa	atgatacacg	tatttttttt	tatcctaaca	172800
catctgaatt	tactgaaata	actaaaatgt	cttaagttac	tttttttaaa	atacacatgc	172860
atagcacaag	cgtgttgcca	aaaatatgaa	tacaggttta	caatttcctta	actaaaacc	172920
aagggttgga	tgtgttttag	aaataagaat	ttcatacaat	ttttaagtgt	tacagggtat	172980
ataaaccatt	atataacaca	taccaggggc	caagggcagc	accccataat	caaacatatt	173040
aatatagttt	cagcaaaaaca	catgggataa	agactatata	cagcttctca	atagttcagg	173100
tcatattttg	ctaccaaatg	aattttgttg	ccaagcttaa	gaagtttttg	gttttcaccg	173160
ctttctgaat	gttagattga	gatgtgggat	tacagactgt	actcatagag	tgcttctaga	173220
aagcagtcag	tcacttcaac	tctcattttt	tttttatgag	actaaaaaag	aaatcatagc	173280
aagtagcttt	tatatcccag	gtttgggcca	aagacttgta	ttgtgggtta	ggaatctaac	173340
ttagtagaag	gtgcacgagc	tgacatcgtg	agtggctaaa	atgagagaaa	aaaagagaaa	173400
atcctaatac	tacagaagca	ctgaactact	gcagctgttc	gttagttatt	aattttaata	173460
aagcttcctc	cttttaaatc	atgtgagttt	ataactggaa	ataggtcaat	aaaatttctg	173520
tcccacactg	ctgacaagcg	atggacgcaa	ttagctttta	tcccactgga	aggtaactga	173580
ctctctctgg	gaccaggata	tgtagaaaaa	agcatttcaa	atataatagga	ataaccagaa	173640
atgtatacag	tattctcaac	ttgggaccgt	tactctataa	tataaacgaa	aggggttttc	173700
tagtcaatct	ctgctgatct	cctgtaccaa	agttcttccc	tttataagtc	ttgtactacc	173760
ttttacaaga	ggaaaaagct	ctagagcgaa	aacacagaa	acactaaaa	cccttccctt	173820
ctctttacaa	ctcaagcccc	gctctcaatt	tgttctgttt	actaattttt	cttctgaaaa	173880
aataccaaat	ttacactgaa	agactaaaat	tcaactttgc	agacaacggt	ttaaaaaata	173940
caattcagtt	tgggtgatgt	gtttttgcagt	cttacaattt	tagctacatt	tttaactgaac	174000
caattgtttt	gttcaatttt	tgagtttaata	ctcagcaagt	ttgtttttta	caaatagtgt	174060
attccattct	aaaaatggaa	gtagcagttg	tgaacaagaa	aacaaccctc	tgagttttgt	174120
ctatttccag	aggaagtact	actttctcca	atttttaatca	caattcataa	aaaagaaaaa	174180
cctaactagc	tagactttta	atatacaaat	acattaaaca	tctagtaaa	caacagaaaa	174240
aggtaaacaa	actaaccagc	ctattttttgt	ctggagaaac	cccaacaaac	tgctggattc	174300
cttgccattt	tgcattcaga	agtacaaaaa	actaaaatcc	tttttactaa	ataatttctt	174360
ctacacgaga	cttgtttcct	ccacaccacc	ctatccaaat	tgtcagcatt	attccagaat	174420
ataatcattt	agtttgagac	cactaaaaaa	ccccgcagtc	caaaatacca	attgtgggtt	174480
ttctgtaaa	aaatggtcag	aaactacaaa	ttgttatcct	aggacacaga	accaatcgac	174540
caaaaggact	tctggaatat	gctgccccca	agattttagaa	tgacacaggc	gaaatagcat	174600
acggcggtcac	gatgtccctt	aagccacatg	accttcctac	gaaagcaaag	gcttaaaact	174660
atcaaatgag	aactccccct	ttctctgaag	ttaaaacaag	gcagggcagc	tggaattaga	174720
gcagcaggga	cagatcggct	gttgactagt	cagaacgggt	cgtggaatgc	aaagtccctg	174780
cgctttcgct	gctccccctt	ccgtgagaag	atctgggagg	gaggaaagga	ggagaaacac	174840
ccagaatcc	tggtagaaaa	gccccggcc	tcgaagatgg	gctctaggga	gacaggagg	174900
ggcagctccg	tgtgtgatga	ccctttgtga	acatgcactc	tgtggcagct	tcagctccac	174960
cgaggctttg	ggagagcgga	ctacggatgc	ccggcgcgcc	ccagctgtga	aggccgcgcc	175020
ggcggagagg	gtccatggca	ccccgcggg	cttcgggaag	ccttccctct	cccacctccg	175080
cgggtcaccc	caggaaccag	cggctcccca	ccacgctcgc	gcggaccacg	gaacagcgac	175140
gcgcaagcag	gtctctttcg	tcagcgtaat	ccctccgcag	aaagccgcgc	actagtttta	175200
atcacgcccc	accccttgcc	cgtggcgcc	acctccgcca	ctcgggcgct	ttccagcagc	175260
ttccagaaac	gtcgccctcc	caaaccagc	cactcacaca	tggcgggctc	agcagccacc	175320
ggccccgccc	ctcctcgtcg	ccgcagtcgc	aactgcgtct	gcggccacag	ggcggacagc	175380
cacgcctctg	cggaggggca	ccggaagtgc	tcacgtcttc	accttccccg	ccacgccacc	175440

FIG. 6S2

gtccttttcag	gcccagcgtg	cagcaggaag	gaggactcct	ttgccgcgga	ctcaagccgg	175500
aagccgcctt	cctagtggag	acgcgagtgg	gggaggagca	gtccgagggg	aacgtgggtt	175560
gaacgttgca	actaggggtg	agatcaagct	ggaacaggag	ttccgatcga	cccggtagca	175620
agaaggggag	tgcccgcggc	aggtaaggga	gaagagggag	gggttttctt	ccgctctcga	175680
aattgggaaa	agagacagag	ctgggatgac	ctatggggta	gtcggcgcg	tgaaaggatg	175740
ggctgggctg	ggacgggggt	caagtgggaa	aggttgattg	ttaagggtata	gagttggact	175800
tacagatccg	tttgggcgca	gagaggtgaa	cgctgaagag	aaaccagagt	ttgttttcgt	175860
tttccaagga	gcgtgggagat	gggcagggtt	aacggaccct	gcgcctcctt	cggcttctta	175920
gtttgggtgt	tgaaactcac	ctcctttggg	cctgttcgtc	tctgattcaa	gacagttggg	175980
tttgggtacct	gacaggggtg	ggtgcagaaa	gctgaccctg	ttcctcgggt	tccaggtcgg	176040
ttgtggcctc	gcttttgaca	gttcacgtgc	cgagcctact	cgctctcggg	gggcgagctc	176100
aaatgggtgg	gtttaaggcc	ccctcttcga	acagctgttt	ccctgggttt	ctccattttg	176160
cacacaggag	tgtgaattaa	gtttaattga	atactttttg	cgattcccag	ggccaccttg	176220
acacgttcat	tgtgctatct	aactgggttc	atgctgggct	aataattcac	attaaggctt	176280
ctggagtata	agtgggtcac	agaagtatga	aaaggggatg	ttagaagaaa	gatgctgggg	176340
gtgaagtaga	gttgaggaag	acagaactgg	aaagctagggt	tggtttcaca	gtacaattgag	176400
cttttaggtca	taatactacc	tttaggttat	attgggctgt	ttggacggag	tttgctgtaa	176460
tcaggctaga	gtaaatagag	aatttttaaac	taagcattga	caggctcaga	cttgtagagg	176520
catcattttg	acagtgatat	ggaagggaaa	gaggtagaga	tttgagacct	ttccaaagaa	176580
ctgtccacag	aattttgggtga	cttactgtgc	gaagagggaa	ataaagaata	gggaacaact	176640
caagactttc	tagtctgtgt	gtttggaagg	atggagacgc	ccacatttaa	gtgagatatg	176700
ggaaggagga	gcagattggt	tttgaaggga	ggaagagcag	ttacttaggg	tcaaatttag	176760
ttgtaaaatc	ccccccggga	ttttgtatgt	aagtcaaagt	gaattgtatt	tggagaaga	176820
actggggagc	ccacctctgg	tatttttttt	atgtccctca	tatggacaaa	taaacctctg	176880
gtattaaatg	aatttttctt	tgggggatcc	tatatattcg	ggatttcaac	caccaacctta	176940
tctggttttt	cccgtctgaaa	tgttgggtga	tggaaatcagg	agagcagatt	tggagactct	177000
ttatatattta	taattgagag	agacaaagag	aaaaccgttt	gattttgaaa	agttttctag	177060
gttccctcag	gtagatggaa	attttcatca	aaaacagttt	attcaaggta	catagcctag	177120
tagtttccca	tttgagagta	ccgcagatg	atacgacgtg	tactgcttct	ctacgcagaa	177180
tgaagtataa	aattagcacc	aaatagtaac	tttaattttg	cagggtgctaa	actttttaca	177240
tgcttttatct	catttaattc	ttagaagaaa	ctaattttac	aagtaagtgt	ctggaccaac	177300
atctgcagggt	acaaaagcctg	aaaagcgtaa	gtttgactcc	tacatagtct	tctttttgtaa	177360
gtagattata	aatagaacca	gccaaaggta	ataagtgtgc	tgtgcctaaa	aagaaagaaa	177420
aaagtttagca	tcagtagttc	tcaccagaag	gggtgatttt	gcttaccagg	ggacatttgg	177480
caagtcagga	aactttttggc	tgttggatct	agagggtaaa	ggtcagtgc	gctgctaaac	177540
atcgtcagtg	catagaacag	ccttcacaaa	caattattttg	gtcaaagata	tttgtagtgc	177600
tgcagttgag	aaatttctgt	cttatgggtta	tttcttcagg	aataggaaat	taagattcgc	177660
cgatactttc	tttaaaaagc	agtttttatt	ttgaaattat	tccttggctt	gaaaggtttg	177720
tgaagtttat	atagccgaac	cagaatagcg	taattagatt	ttaaagtga	ttgtgagcca	177780
tcgattccca	ggagatgggt	gtcatagaat	ctaggattct	tggatttggg	aaagacttat	177840
gcctagaatt	atttttacaac	atttctgcta	agtggtaatt	ctcctctgcc	ctaaaggtct	177900
cctgtattttg	attttcttat	cattgtgaac	ccacaattaa	aatgctctta	attatattttt	177960
gcttacactg	agctccgggtc	tcttgttaatt	tttactctgt	taaatgtggt	tctgcacctat	178020
aggactgcac	tcaaaaacaag	cttgccacat	atgtaattttg	tactaggaca	gtgtttatat	178080
ttttgttcag	ataacaaaaat	aagttaaatg	tgggtgtaatt	tagatcattt	acaaataata	178140
ttttgtttagc	agctttttaat	aagtagtatt	tttcccaact	gggtgaagtat	taatgttgggt	178200
agttgaaaac	aatagggaatg	tatggaatat	atggttcact	ggttctttttg	ttcctgtcaa	178260
atagtggcac	aatggatctg	gggtttttct	cagtataatg	ctggcatatt	tgtttcaaat	178320
tgtacataga	ctctaaaaag	ttaggctttc	aaattctgggt	caatatagtt	tgcttttaaat	178380
agtagctgcc	tctactacaa	gtttttattta	atttgttgac	aaatgagtct	gctatgaaaa	178440
ccggtccctgt	tgccagtcac	taccctctgt	tcacaaattt	gctgggttta	taaatatagg	178500
tatcatattttc	acttcaagat	tataattttta	gaatatgttt	attctaggac	atatagccct	178560
caaaatctgc	ttactatata	cgtcttataa	aatagcatgg	ttctttttta	tagtaaatag	178620
aattttttatt	taattgtcta	ttgactttttt	ttttccagggt	ttcattgaaa	aaatccttag	178680
tgatattgac	atgtctcaag	tgacataaat	tagccaatga	ctcggaatga	tggattctcc	178740
gaagattgga	aatggtttgc	cagtgattgg	accagggact	gatataggga	tatcttcact	178800
ccacatgggtg	gggtatttgg	gaaaagttag	tgaacttatt	ttttgcctga	gtgcaaacgtt	178860
ttttttttttt	ctctatttttt	gagacttaaa	ttcaattttg	atgttaccag	ttaaacttcta	178920
aaaaattgtg	tcttccacgg	aaatcttaca	gtaatggcga	aagattgttt	taatgtgttt	178980
acctttctgt	gttttattga	tacatgaaag	tggaaataaa	acatagacct	tatgatttac	179040
tgttcttttga	aaatatggta	cataaattct	cccggttaat	tgatgttact	tttttctctg	179100
caaataaaat	tgatactatt	cttaacacat	aaaatttaaat	atttaaaact	ataaacattg	179160
tcttttttga	ataatagctg	tattttaaagg	cttatatgca	tttcttttgt	ttgccatgtt	179220
taaaataacct	tgtcaggata	cttgttaattg	aaaattataa	ttttttctgg	ttacctttcc	179280
atttaacttt	taatatatttg	atatattcta	ggaatgtcta	tattttaatt	tgctttattt	179340

FIG. 6T2

ctcttttaga	atthttgatte	agctaaagtt	ccatcagatg	agtattgccc	tgctttgtaga	179400
gagaagggaa	agttaaaagc	cttaaaagact	taccgaatta	gtttttcaaga	atctatctttt	179460
ttgtgtgagg	atctgcagggt	aaagtatttaa	tcttatatag	tatatataag	atthtttctttt	179520
tttctttttgc	ttttttatta	attgttttaa	aagtttactc	atthttttgtt	tttttagacta	179580
gattttttaat	atgtaatctc	agtttgtaag	tctgtctgggt	atacaatgtt	atthtttccac	179640
ctacctttac	ttgggttgct	aaagatgttc	gtttttattg	ccatttgatt	tgcgagagga	179700
gaaaatacat	ttcaagggtt	ttttcttttt	ttttaacctt	ttggaggtcc	ttgttagcta	179760
ttagcatata	gtagttactc	tctcatctct	ttgggtttatc	tttgcaactg	atgggaaaag	179820
ttatgaattt	ctaattgtacc	tggaagagta	ttttggaaat	tggttagtcc	aaaaccagta	179880
tatatactct	gaactaaaga	gagtatagaa	tcttgtaaat	tctaaaagat	ccttttagaa	179940
gctctaaatc	gcttttagaa	ttatagtaat	ttgtaccgac	tggtacggct	tttatatagc	180000
agctcattaa	attctgtaat	actccacatt	ttattgtatt	tgacagttta	tgagactgtc	180060
tcatacactt	ttaattctca	gaactttgca	agattttgtat	tcctattttca	tgaataagaa	180120
aataaattga	tttcagaggg	tttgggaaca	taagatcctg	atacagtggc	agagctgtgg	180180
ttggaataca	gacttctaat	ttcagatctg	tttattccag	caaaaaatta	gcagttcatc	180240
agaattacct	ggagtgcctt	taataaaatt	ctgagtatca	ccccagatg	ctgattcaat	180300
agagttggcc	cagaattctg	tggttttgta	acatttgagg	atgagtctga	tcctcatcag	180360
ccagggtttg	aaaatactag	actaaatcac	atgggtgtta	atagatactt	atgctgggta	180420
taatttgaa	taaagtaatc	ccaggcgtgt	ctacaaatat	aaatttcttt	atgtttatat	180480
tcagtaattt	tttttatgag	tgctactgtt	tggtcactgtt	gcagatacaa	tgtaggata	180540
caataataaa	acaaaaattt	cctgccccct	aggaagtatt	gtcatagagt	gggaaagaca	180600
gtgaacaagt	atgtgttttt	ctgtcagggt	ataaaaagt	ctgtggagaa	aaataaggca	180660
gtagggactg	gaatgccaaa	gtagggggag	tttgcaattt	taaataggat	ggtaggggga	180720
acgcttcaat	gaaaagtgca	attcgagcaa	aagcctgaaa	gaggtgaaga	gcagtgagct	180780
ttctaggcag	gggaagcaag	ttccaggaag	gccctgagag	aatggaggct	gcctgtcatg	180840
tttgtgtac	tgcaatgaaa	gcagcagagc	gatagaaggt	ggatcagaaa	aataatgggg	180900
gagctggacc	aagtagggtc	ttataagcca	ttgtaagctt	tctggccttt	actatgggtg	180960
aaaccaggaa	ccatggcaga	gatgttgcca	gaggagtgc	ataagttgac	ttcagtgtta	181020
aaagcattac	tgtggctgca	ctgttgaaaa	tatatgtaat	gggcaagacc	tgaagcaggg	181080
agattagtta	tagtataata	tgaattatat	ttggctcctg	tctatgggtt	ccgttacaga	181140
gctaaaagtc	ttggaatttc	ctgaatgata	agagtgtcct	gttattcaga	atgagcctgt	181200
ttgctaacac	cgggggttcat	actattgtgg	tgacttagga	tggaagccta	gatagcctca	181260
gatggggcaa	gtagctggaa	agaccacatg	attagagaat	taacgggtta	gaacttttag	181320
ccccacgtac	agggcctccag	gaaaggagtg	gaggggctgg	agatcaagct	gtataaaaaat	181380
atcaagattt	ggatttaatg	agtgggttgc	tgggggctgg	tgccgtgtag	gaggtggtat	181440
gcttagagga	agtggaaagct	tcatacctct	tctgtcccat	accttgccct	actcatttct	181500
tcactctatac	cctttataat	atccttttag	ataaaccaat	aaacataagt	aagtgtttgt	181560
ttgagttctg	cgagctgtcc	ttgcaaacta	ggtatgcccc	agaaggggga	gtgggaacct	181620
ttgtagccag	tcagtcagat	gtactggtgg	cctggatgtg	ggattggcat	ctgaagtggga	181680
gggagtcag	ggactgagcc	ctcaacctgt	aggatctgac	atggctctcta	ggtagataac	181740
atccaaatgg	aattggatta	taggataccc	atttggtgtc	ctctggagaa	ttgcttgggtg	181800
tggggaaaaa	gccccacac	atctggtcac	aaaagtgtgc	tgggaggata	gaatatgtga	181860
aaattgtcat	aatcaaaatg	gagtcacttg	tgtaaaaaa	gaaaaaaaaa	tcctgactgg	181920
ccaggcagag	tggttgacaa	ctgtaatccc	aacacttttg	gaggctgagg	caggaggatt	181980
gcttgatccc	aggaattgga	gaccagccca	tgtaacatag	tgtggccttg	tctctacaaa	182040
aaaaaaaaatt	taaattagct	gggcatgggtg	gtgtgagctc	gtagccccag	ctaccggga	182100
gggggactac	gggtgcacgg	caccatgccc	aggaggtcca	ggctgcagtg	agctgtgatt	182160
gtgccactgc	attccagtca	ggatgacaga	gtgtgagacc	ctgtctctat	taaaagaaaa	182220
aaaaaagaca	aatagatcca	ggaaaggcta	tgaagagaga	gctttcatgc	ataaaatacca	182280
aaatatctca	taagactctg	caaaaaccac	acccttgcac	aaaggccatc	atgaaatact	182340
tctgaaatac	acagaaaata	catcatgaaa	taaaatacaca	gaaaataact	ctgcaaggca	182400
atctgcccag	caactgcctg	gtccatctgt	ggacgggtgt	catccttgtt	attgatcctt	182460
gtagccaagg	gtaattatct	caaaacaagt	atgtgatcct	ccttattttt	ccttaaaaaac	182520
cctttgtctt	cccttacctc	cctgaacaca	cacagtttac	tatggcatgt	gtattcccat	182580
tggaatactt	tattcctgaa	taaattgtcac	tttcttttta	gaagcttctc	ttttcttttt	182640
atthtagattg	ataagtagaa	aggaaaaaaa	gcttttttcc	cctttggacta	gttgaaggca	182700
gttgacgtat	tctgggggag	agggtggtgg	cagaggtgtt	gaggcatggg	tgaggtttat	182760
ttatactttg	aaggtaaagc	caacaggatt	tgctgaaaga	ttgggatatg	gggttggaag	182820
gaggaaatcaa	ggatagttcc	aagatttttg	gcttgaaaaa	ttagaagaat	ggaatcgtga	182880
attactgagc	tggaagagct	tggaagagca	aggttttggtg	gagaagatca	ggactgtaag	182940
aatagagaag	tccttggtccc	caggagtttag	gttttttggt	attaaagtta	gatgtactac	183000
atagattttt	agttgtgttt	ttgttttttt	tttttttttt	tttttttttt	gagacggagt	183060
ctcgctctgt	cacgaggctg	gagtgcaagt	gtgcgatctc	ggctcaccgc	aacctccag	183120
tccctggttc	aagggaattct	cctgcctcag	cctcctcagt	aggtgagatt	acaggcatgt	183180
gccaccagc	ccagctaatt	tttgtatttt	tagtagagac	gggttttcac	tatggccagg	183240

FIG. 6U2

atgggcttga	tttcoctgacc	tcaggtgatc	cacccacctc	ggcctcccaa	aatgctgggg	183300
ttacaggtgt	gagccaccac	gccagcccg	gagttttggt	ttttgaagca	ttctttttca	183360
agtataaag	caaaaaatat	ataatcaaga	atttttaagta	tatactttgg	aaatgttaaa	183420
aaggaacatg	agtaatttat	tattattttt	ttaattttcta	gtcagcaatg	agagcccagt	183480
gtactttatg	aagtagattg	gtttacacca	ggagtgaagca	gacattttgt	atgatgcaca	183540
aacaaggaat	gatttttttg	ttttttaaat	ggttaggaaa	atatcaaaaat	aaaaaatgcc	183600
agaaaaaatc	aaaagaaggg	ccaggtgcag	tgtttcacac	ctgtaatccc	agcacttttg	183660
gaggccaagg	tgggtggatt	ctcttgaggt	caggagttcg	agaccagcct	ggccaacatg	183720
gtgaaaacct	gtctctacta	aaaatacaaa	atagccgggt	gtggtggcat	atgcctgtaa	183780
tcccagctac	ttgggagggt	gaggcaggag	agtcgcttga	agccagtggc	agaagttgca	183840
gtgagccaag	atttgagcca	ctgcactcca	gcctgggcga	cagaggagac	tctatctcaa	183900
aataaataaa	taaataaata	aataaataaa	taaatcaaaa	gaagaataac	ctttcataat	183960
atgtgaaaaat	taaatgaaat	tcaaatttca	gtgttcataa	ataaagtttt	accggaacat	184020
agccatgctc	aatcatttat	gtattgttca	tggcttcttt	tgcatacaac	aacagagttg	184080
ggtagttgtg	acagactatg	tagctcataa	aatctaaata	tttattatct	agccctttat	184140
cagtaaaactt	tgtgatccc	tgtataagtc	ctctgaatca	aattattttc	aaagagttcc	184200
gttataaaaat	ttggagttta	ctctgtctga	aattgcaag	aaccatttgg	aaaacctctt	184260
ttagttaggt	attttacatta	aaatgttctc	tgatttgtaa	acactaatat	tcaagactgg	184320
tccaaaatta	taccaaattg	aaactctcaa	gtgtttttta	acagtaggaa	gttttaactt	184380
tttttttttc	gtggagtagt	ctatcattca	gcgtttactt	tggaaacattt	aattagttct	184440
tttttaaaaac	ccatgaaatt	tataataaaa	atttttaaatc	attaatgttg	agtaatcaaa	184500
gaaaactttt	tttgttttct	ccatttgtaa	aatgagtaca	ttattattat	aatttgcctt	184560
tggccatacc	ttgttgataa	ttactttatc	aagtataaga	agacatggta	tgttttcctt	184620
tttctatttt	cacaagaata	agtacaggaa	tttacttaag	ctgctccaaa	actcagttaa	184680
agagacagga	ttaggttttt	ttcagcattg	gatttttaaat	gatactagat	ggttgcgctg	184740
ggctaaaata	ctaagtcttt	gtgtatat	ttatgacttt	tttgaagaca	gcttaaaaagc	184800
tttattctag	ttataaaaaat	gatacatgtt	cactgtaaat	agaaacaagt	caggtatata	184860
gagatacaaa	tatttagaac	atgtggaag	aggcaacaaa	attttataaa	aagaaaaaag	184920
ataaaaatct	gaaatcatta	atttataagg	gaaaaatcag	ggcaaggaca	aattatatta	184980
cagattggcc	tatggtggga	gcacagatta	tatagagaaa	agtcagttaa	gacacttgct	185040
aagagtgtgg	gtggaaatca	ctaagttttg	cagtcctggg	gcctcttatg	gtttattact	185100
gttttgttct	tttttttttt	ttaatatgca	ttccttttga	accaaggggt	tattatgttt	185160
tgaataaagt	agaggtgtaa	gtaggatgca	tataccatga	tcttgactac	ttgagattca	185220
caaagggttt	togtctcagg	attttttttt	ctcttaaaaa	aatttgtatt	aattttttaa	185280
ttgtataaaa	tttaaccattt	ttatgtatag	ttatgtatag	agttcaggag	tattaggtat	185340
attcacttgt	gcagcagatc	tctagaactt	ttttcatctt	gcaaaaactga	aactctgtac	185400
ccattaaaca	accacttccc	attttcctct	ccccagctt	ctggcaacca	ttctagtttc	185460
tgtttctttt	cttttttttt	cttttgagat	ggagtctctg	tgcgccaggc	tggagtgtag	185520
tggcatgatc	tgggtctcgt	gcaacttctg	cctgcgggtt	caagcagttc	tcctccctca	185580
gcctcttgag	tagctgggac	tacaggggtg	caccaccatg	cctggctaata	tttttttttt	185640
tttttttttt	ttgtattttt	agtagagacg	ggggtttcac	catgttggcc	aggctggtct	185700
cgaactcctg	acctcaggtg	ttctgcctgc	ctcagcctcc	caaagtgtctg	ggattacagg	185760
cttgagccac	tgtaccgggc	ctctagttta	tgtttctatg	aatcagactc	agtacctcat	185820
ataaacggaa	tcatacagta	tttgccctttt	ttgtgactgg	cttattttcac	ttggcataat	185880
ggcctcaaga	ttcatccatg	ttgtagcatg	gatgaatata	cagttaggag	ttccttttct	185940
tttttaagtc	tttaatcca	gtttatttct	gtttatttct	ttatttttatt	atacttttaag	186000
ttctgggata	catgtgcaga	acgtgcaggc	ttgttacata	ggtatacacg	tgccatgggtg	186060
gtttgttgca	cctgtcagcc	tgatcatctac	gttaggtatt	tctcctaata	ctatccctcc	186120
cctagccccc	taccgcgcga	caggcccccg	tgtgtgatgt	tccctctctt	gtgtccgtgt	186180
gttctcattg	ttcagctccc	acttacgagt	gagaacatgc	ggtgttttgt	tttctgttcc	186240
tgtgttagtt	tgtctgagaat	gatgggttcc	agcttcatcc	atgtctctgc	aaaggacatg	186300
aggagtctct	tactttttaag	gttgagtaat	attccacatt	atgtgtatgc	cacattttct	186360
ttatccattc	acctatctgc	agatgtttga	gttgctttca	ctttttggga	attgtgaata	186420
atgctgcagt	gaatgtgggt	gtgcaggtac	cttttcaaga	ttctgctttt	gagttttttt	186480
tggatacgta	ccttttttatg	atgctttaaa	tacatatatg	ctatttttta	aggattctca	186540
gttttctgac	atatgatagg	acttaggaag	taatctcaaa	gcacatgttt	gacaggttgt	186600
tagtttagatg	tgactgcagc	tagttggaaa	gtcagaagaa	tctagaactt	gtccatttat	186660
actaaagaat	gtcatagtaa	gtgcagtatt	atgagtgtaa	tgttcaattg	gtagaagagg	186720
ctatctgagg	ggatttagtg	catttccagtt	atctgttggt	gtgaaacgaa	tcaccttgaa	186780
acttagtgc	tcaaaaattt	taatgggtgg	tgggcatggg	ggctcacatc	tggaaactcca	186840
gcactttggg	aggccgaggc	aggcagattg	cttgaaccca	ggagtttgag	agcagcctgg	186900
gcaacgtggg	gaaaccttgt	ctctacagaa	aataccgtgg	caggcgcttt	tagcaccagc	186960
tacttgggag	gctaagggtg	taggatctct	tgatcccagg	aggcagaggt	tgagtgagc	187020
tgggatcggtg	ccactatact	ccagcctgga	taacagagcc	agaccctgtc	tcaaaaaaaa	187080
atttttaatgg	ctccatttat	tatttcacat	gattatgtga	gttgactagg	gaattcttac	187140

FIG. 6V2

acatcacacc	atgtcagctg	ggacagctga	aatgtccaca	tggttggcag	ttggtactag	187200
ctgctagctg	gaagttgagt	tcaaatagtc	agccaggggt	ctcagttatt	ttccatgagg	187260
ttctctccat	gaggccagct	gggctcttca	cagtgtgata	gctgggacta	agaaggagtg	187320
ttccagaaga	agggcttgct	ctcttgagcc	agtgttatac	aggcctctat	gtatatcatg	187380
tgtgctaagt	ttccatcaaa	gctagtccaa	gggccaagcc	aactctgtac	agtgtaggga	187440
ctggctgcag	gagggcatga	attaccagga	ggtgtagtcc	tctagtccat	agggaggggc	187500
atcaagatag	tagtctacca	tacttgtgta	aaagaaggca	ttaattaact	attattatta	187560
ttattattat	tatttttagag	acagggctct	gctctgttgc	ccaggctgga	gcagtagagt	187620
ggggcaatca	tagctcattg	cagcctccaa	ctcctgggct	taagcaatcc	tcccatctca	187680
gcctcccaag	tagctgggaa	tacgggagtg	tactgccatg	cccacctgaa	aaagaaggca	187740
tattttaaaa	gcagaccttt	agtgtagagg	gttcttgaat	ttgttattta	aaatattctg	187800
gtagttttta	aaacttaggaa	agaccacctg	attctttttag	tgatatgttt	acattgttgt	187860
tatttggcat	aaatttgtgt	aatgcacagt	aagatttcat	gaagtcatta	aaattcagcc	187920
acttggactc	taaacccaat	aaagatgtaa	aacagcagtg	ctatgagatg	catattcagt	187980
ttcaaaatat	aggaacacaca	gaaattactc	tgtgcacttt	taatttgaaa	atacttttta	188040
aatgtgtagt	ataatgtagt	gtctgtccca	aaagagtaac	attcattata	gtgtttcttt	188100
acgttgttga	aaattttaaa	ttcacttaac	attagatttt	tattaaagca	aaaatatgtt	188160
ttccttatta	gcttaccctt	ttgtaactca	gattaaaccc	ttgattgttc	aaattaacct	188220
gaaaaaaatt	attctttttg	aggccaaact	tttgattaag	tagttgtttg	tctctaattt	188280
tttcaaattt	atgtgtataa	atataacctg	tcatacaatc	aatgctaaca	ttctatacat	188340
gtttttcatg	atatgaaaac	tataaaacat	gaagttattt	gaattttgtg	agtttttatc	188400
atttttattt	tactttccag	tgcattctatc	ctttgggctc	taaatcactt	aataacctaa	188460
ttttctctga	tttggaaagaa	tgtcacactc	cacataagcc	tcagaaaagg	aagagcttag	188520
aaagcagcta	taaggattca	cttcttttag	caaattccaa	aaagactaga	aattatattg	188580
ctattgacgg	tggaaaagtt	ttgaacagca	aacataatgg	agaagtatat	gacgaaacct	188640
cgtcaaactt	acctgatagt	agtgggtcaac	agaatccaat	taggacagct	gattccttgg	188700
agcggaatga	gattttggaa	gctgatactg	ttgacatggc	tactacaaaa	gatacctgcta	188760
cagttgatgt	ctctggaaact	ggcagacctt	cccctcaaaa	tgaaggatgt	acatctaacc	188820
tggaaatgcc	actggagagc	aaatgtacat	catttcccca	ggctttatgt	gtccagtgga	188880
aaaatgctta	tgtctctctg	tggttagact	gtatcctgtc	agctttgggtg	cactcggaag	188940
agttaaagaa	caccgtgact	ggactgtgct	cgaaggagga	atctatatct	tggcggttgc	189000
ttacaaaata	taatcaagca	aatacacttc	tatataccag	tcaattgagt	ggtgttaaag	189060
gttggtacta	atattttatt	tttattttact	tattttattca	tctggagtca	gggtctcatt	189120
ctgtcaccca	ggctgaccca	cagtggcagtg	atcatgtctc	cttgacagct	tgacttccct	189180
ggctcaggtg	ggcctccac	ctcagctctc	caagtactgt	gaactacagt	cgtgcaccac	189240
catagccagc	taagatagtg	agatgggtggc	cccactgtct	tgcccagggt	ggactcgatt	189300
tcttgggtgc	aagcaccctt	cccgcctcag	cctcccaaag	tgctgggatt	acaggcatga	189360
gtcaccattc	cagcctactt	gtcttttaatt	cttaaaaaata	ttaatgttga	gttttgtctc	189420
ccagcatgtg	ggaaagatgt	catccattgc	ttctgtttcc	tggaggcctg	ggagcaagga	189480
gcccaggaac	agtatcacga	agcttgagat	aataccagtt	acattatcct	gactgcocaa	189540
aaggcagttt	ttttgttttt	tttttttata	ctttaagttc	tggggtacat	gtgcagaacg	189600
tgcagttttg	ttacataggt	atacgtgtgc	catgggtggt	tgttgacccc	atcaaccctg	189660
cacctatatt	aggtatttct	cctaattgctg	tcttcccca	acccctccat	tcccatcag	189720
gccccagtg	gtgatgttcc	cctccctgtg	tccatgtgtt	ctcattgttc	aactgtcact	189780
tatgagttag	aatatatggt	gttttggttt	ttgttcttgt	gttagtttgc	tgagatgat	189840
ggtttccagc	tttatccatg	tccctgcaaa	ggacatgaac	tcataccttt	ttatggctgc	189900
atagtattct	atgggtgtata	tgtgccacat	tttctttatc	cagtctatca	ttgatgggca	189960
tttgggttgg	ttccaagtct	ttgtctattgt	gatttttttt	tttttttttt	tttttttaag	190020
acagagcctc	actctgttgc	ccaggctgga	gtgcgatggc	atgatctcag	ctcactgcaa	190080
cctccgcctc	tcagggttcaa	gcaattcttc	tgcctcagcc	tcccaagtag	ctgggactac	190140
agcgccccc	caccagggcc	agctaatttt	tgtattttta	gtagagacag	ggtttccaca	190200
tgttgggtcag	gctgggtctg	aactccagac	ctcatgatct	gcctgccttg	gcctcccaaa	190260
gtgctgaaat	tacaggtgtg	agccaccata	cctggcctag	gcagtctttt	tcaaaactct	190320
aagactgtgc	ttgtgtctca	gggtgtcagg	ataatagtgg	ttagttttta	gtgttttaac	190380
tactgaaaag	cagaatgaag	aagtgaagta	aaatcaccca	taatcacaca	acctcctaag	190440
atctcttggc	acaataaggg	atatgttttt	catttttattc	tctgtaaaat	aggatactta	190500
tgaacccacc	tcccaacaca	ggaagaatta	aaacattccc	aataacttac	atttacctat	190560
gcgtttcctc	ccatcccatt	ctctacctcc	cccccataag	taatcattat	ctgaaatgtg	190620
tttcatcatt	ccatcttttc	ttagtttttc	ttacatgtgt	ttatctaaac	agtatacagt	190680
agtctccctc	tattgtagtt	gtacttttct	tgggttcatt	taacccgagg	tctgaaagta	190740
gatgagtata	gtacagtaat	atatttttag	agagagggag	accacattca	cataactttc	190800
attacagcat	attgttataa	ttgttgtatt	ttattattag	ttttaatctt	actatgccta	190860
attataaac	gtatgatag	gtatgtagtt	ataggaaaaa	gcataatata	taaaattgtt	190920
agttactatc	caaggtttta	ggcatccact	ggggctcttg	aaggtatccc	tctcagataa	190980
tgggggatgg	atgggtactga	accctgtata	tacaatgttt	ttccctatac	atacataatt	191040

FIG. 6W2

atgatcaagt	ttaattaaga	gtaaattaaa	tgtggggccag	gtgcagtgcc	tcacatctgt	191100
aatcccagca	cttttaggaag	ctgaagcggg	cagatctcat	gaggtcaaga	gttcgagacc	191160
agcctggcca	acatgggtgaa	accccatctc	tactaaaaaa	tacaaaaatt	ggctggctat	191220
ggtggcacac	gcctgtagtc	acagctactc	tgaggaggttg	aggcaggaga	attgcttgaa	191280
cccaggaggt	ggaagttaga	caatcacttg	aacctgggat	cacgccactg	cactccaacc	191340
tgcctgggtg	atagaatgag	actctgtctc	aaaaaaaaaa	aaaaaaaaaa	aaaagtaaag	191400
taaatgtggc	tcaacatgtt	gctgtcagtt	ggaacatttg	tttctgatcg	tgtcttccac	191460
ccacaaattg	aatgcttttt	ccatcttaac	acttatcagg	cactgtggcc	ataacttgag	191520
cagttgagat	gcaacagcaa	aattagcaca	aatttctttt	tctttcttcg	cagtttcatg	191580
gataagagat	ttgttcttag	atctcagcaa	cctcagcata	tgattttttt	ctttaagttg	191640
agaactttga	cctttttact	tagagaagca	ttttacagct	tctctttggc	atatctgaat	191700
tgccagcatt	actatgctcg	tgctttgggg	ccattattaa	gtcaaataag	ggttgcttga	191760
acacaagcac	tgcaatacca	tggcaataga	tcgcatcacc	aagatggctg	ctaagtgaac	191820
cacaggcagg	agtgtagaca	gcatggacac	attagacgaa	gggaagattc	acgttgccag	191880
tggaacacag	caggacagca	agagagttca	tgatgctact	cagaatggca	tgaaatttaa	191940
agcttataaa	ttgtttctgg	aattttccgc	ttaatatttt	cagaccacgg	ttgagttcag	192000
ctaactgaaa	ccatagggaag	caaaacacgg	atgaagaggg	accacttcgt	attgcctaag	192060
ttagtttggt	ttgatcttct	gggacctttt	tttcttggtg	taaaaattta	tggggctgtt	192120
tatagttgtg	gctcattgat	ttttcattgc	tacataatac	ttccattttg	taaatataac	192180
agaatattca	tctacctgtc	agtggacagt	ggggtttttt	tgccattata	aatgctgctg	192240
ctgtgaccat	ttggggggca	agtctcctgg	ggcacagtat	gagtttccct	tctgtataac	192300
aaaggaatgg	aaaattatag	actttcgttg	ccaaattttac	aagataatga	caattgtttt	192360
ccaaagtggg	tgtaccaagg	aattctccca	ttaatagtgt	atataagagg	tcttctctgat	192420
ccatatattc	ttcttggttt	attttcacac	ttttgagatt	tttgctattt	gagtgggtata	192480
aaatgggtctg	tgatcttgat	ttgccgtttc	cacattttga	agagggtgtc	ggctctatgt	192540
gtatatattg	ctcatatttg	ttccctcttc	tgtgaaatgc	cttttgatc	ttatccctat	192600
ttgttctggt	ctggttgattg	tcacgtttta	attgatttgt	atgagtttgt	tccttgatc	192660
attgttgcta	gagttacatc	agatgtgttg	ctgaactcgc	tcccagtttg	cagcttgctg	192720
ttttactttt	taaaaactgt	cttgatttat	agggaagtct	ttatcttttc	atttggagct	192780
agtaatgttt	gtggcttttt	aaagaaatta	ttactattcc	caaggtcaga	aaatcattca	192840
cctatatttt	aactgaaaag	ttataaagtt	ttgcttttga	cattgaaaat	tctcattcag	192900
ttggaattca	tattgatgtg	tggatagagg	taaggatcca	tttttttccc	atttgcatag	192960
ccagtttttg	tagctccact	ttattttctc	acttgatctg	ccatgccacc	ctagcatgt	193020
atcaacatat	catgtatgtg	tgcagctgtt	ccttaactct	caatttttatt	ctcttggtta	193080
ctttgtctaa	cccagcactc	atacttttta	aattattatg	gctaccttgt	agggcaagaa	193140
tcctcacttt	tattcaactt	cttttgaagt	gtcttgatgc	atattttttc	tgatcttact	193200
tggccatata	tattttgggg	acagatgtga	catcatacca	agctttcttt	gcttgacatt	193260
gtagatatatt	tcttattcat	taatgtgcta	aaaaatttga	gttttggtcat	acagctcttt	193320
atatggatct	tatacatcgt	ttccctcttg	tttaaccattc	aggctgttac	tagtttttgc	193380
tgttgtagaat	taacaccagg	acaaatatcc	atatatcttt	tgaattaat	actgactagt	193440
ttcctaggaa	agatattaga	atatgaatat	taaaggtctt	gctgaataca	gttttcagaa	193500
tgggtgtacc	aatatataat	tccatttttca	ttatgtagaa	aaaatacctc	agtgttttct	193560
aaccaccttt	ggttagaaca	ttcaagacgt	tatgggtttg	ttaggtaaga	aatattttgt	193620
ttcagtgtag	gtttttctttg	agactgaact	tttttgtgtg	tgtcagtcatt	ttacagtttt	193680
ttgcaatttt	taaaattcag	tttctcacaa	gcattttggc	tttgactttt	cttctatttc	193740
tgtcttctct	aattacagaa	acccagtggt	taagtaggtg	acagttcagt	tgtttgctgc	193800
agaagagcag	cagttcaata	ttggaattaa	cttttaatttt	atgtttttta	tctgttacta	193860
atttttttaca	gaataattgt	agttttttata	atctgggttaa	ttatatgttt	gagctgcatt	193920
acttttgcaat	gtaagttttt	tttttttgga	tgggtcaaata	acaaaaattc	tggttaatgc	193980
ttattttcata	ttacaggaga	atccagatat	ttcatttaggg	aaacatataa	gcagagtgtg	194040
atcaggctgt	atgaattatt	tataagagat	tgcagtgaaa	agatctattt	gtagcttaag	194100
agtaagtaga	gtcagatgca	tgtagagctc	tttattcaaa	ataattttct	tattaatctt	194160
ggatagtttt	ttgtcacagt	aattccattt	tgaagataat	aaatattacc	ataaagaagt	194220
gatcaaaaac	atagatatgt	gtgccaaaag	gtattttatca	caatagtatt	tataatagtg	194280
aaaaaagaaa	caactaaaat	gtctggcaat	aggagaatga	ttaataaagc	gatgtttcag	194340
ctgaatatag	tggtcatgccc	ctgtaagccc	agctactcag	gaggttgagg	ctgcaagatg	194400
gcttagagccc	aggagttaat	gaccagccca	ggcaacatag	caagaccctg	tctccaaaca	194460
cacaaacaca	cacacaagtg	ctatgttttca	gtcactgtat	aataactagc	cagatttttt	194520
gttggttggtg	ttttgttttt	gtttttgttt	tttgagagag	catctcactt	gccaggctg	194580
gagtgcagta	gtacaatcac	agctcactgc	agcttgtaga	accctaacc	tcctgggctc	194640
aaatgatcct	cccacctcag	cctcctgagt	agctgggact	acgggtgggt	accaccatac	194700
ccagcttttt	ttctaagaga	taggggtttc	actatgttgc	ccaggctggg	cagtttttaa	194760
tgaagcacat	ttgtgtagac	aaagcaggat	gtggaacggg	ataaacacta	tgttgccact	194820
gaagacccct	tcaaaccctt	caaaaatgac	atagaaggga	aatatgagat	attagtttgg	194880
gaaataattg	taactttatt	aagactcctt	ataaatttat	ctgttcctat	gacctggcta	194940

FIG. 6X2

agttcaataa	aagttacaca	gagtgggaata	aatgggttaga	catcatttgt	agtataagta	195000
attgcacata	aggaggtaac	tttagctgtt	ttagagatag	acatagtatc	tgaaagggtta	195060
gttatttttac	tagacctgtg	attattttggg	tgagaaaggc	tttcaactgag	atttttaccca	195120
ttcagtaagt	actaatgata	ttgtgctgat	agcatatatt	aagggaatat	atgggtatacc	195180
acagagaaaag	aattaaaggaa	attttgtgtt	ttgcttttttg	tctgttttgca	aaacttactg	195240
actcagctttt	cattctttggg	aatgtgtcag	ttttctgtgg	gaagatatac	attgatgagg	195300
aattgataat	gttctctgtg	ttttcttaga	tgagatttgt	aaaaaactta	cctcagaaat	195360
atttgcagag	atagagacct	gtctgaatga	agttagagat	gaaattttta	ttagccttca	195420
gccccagctt	agatgcacat	taggtaagta	attggtaaaa	cttacttgta	ttatactcat	195480
ctaccatata	gaaatatgta	cctcataagg	aaatataata	ctgttttgatt	accttgggatg	195540
atcatattctt	tgaggagag	aatctgagta	gtttgactta	ggaatctacc	actgggtaag	195600
ttattgtagg	gcagagctgt	tccatataaa	tatgtaggct	gggtgtccac	ctcttgagag	195660
tggtgtcagt	tctcagaacc	aggagaattt	tagggggcat	atcattagtt	gcttctctag	195720
tacgtttcct	agtagacaga	tctagcattt	ttaacctcaa	ttgtgcatta	aaaagcaccg	195780
agggaaattta	aaagtaaatg	ccaatgctgg	ggcatttgaa	ttaggatctc	agggatgggg	195840
ctcaggaat	cagtaatttt	tagaaaacct	acatagttgt	tatatgtacc	cagggttttag	195900
aatctcatct	aaaccaacca	tagtaattct	acttccctac	cagtgattgg	tttaggaaatg	195960
tccttgtggg	agagttttgg	ccagtggata	ttaagagaaa	tatgctgatg	gccttttggg	196020
aaagcttcct	cgccttttaga	aagggcacaa	ggatgggacc	tctttgttct	ctgtgacttg	196080
gttttttggcc	tgtgggagtg	gcgtgcagca	agtgcagctag	agagtctgtc	caaacctttc	196140
taaaatttttt	tagtatttgcg	aaaaggagct	gcgggggtttt	tttgttttgt	tttgttttga	196200
aagggtctttt	tgtttttattt	ttcttgtatc	cttgttataa	ctcttctatt	aatgttatag	196260
tagcagaata	tgatactccc	tattagtaat	aaacctatatt	atgtaaaata	tcagtgccctg	196320
ctagttttttc	tctcaatgag	tgacatttaa	cttatattaa	aaaatgatat	ttatattttta	196380
taataaaaatc	agttgtttgct	actgatttgt	ctagcatgta	caaaagacac	catgcttcca	196440
gatcattata	aaatatgata	ttttataata	tatttacaat	atattttataa	catattttata	196500
tacttagaat	atattttata	aggctgggct	tggtggctca	tgcttgaat	cccagcactt	196560
tgaggaggcca	aggcaggcgt	atcacagggt	caagagattg	agaccatcct	ggccaacatg	196620
gtgaaaacct	gtctctacta	aaaatacaaaa	aattagccgg	gcgtggtagt	gtgtgcctgt	196680
agttccagct	actcgggagg	ctgaggcagg	agaatcgctt	gaacttggga	gacagagggtt	196740
gcagtgcagct	gagatcacgc	cattgcattc	cagcctgggg	acagagcgag	actccgtctc	196800
aaaaaatgta	tatatatata	tatatatata	tgtgtgtatg	tgtgtgtatg	tgctgtgtgta	196860
tatatatata	tcgggaagca	tggtcatcttt	tgtacatgct	ggacagcttt	tgacgtactt	196920
cttttgactca	tgcttctgcc	ccctaattttt	cactttttttt	cctacaatttt	attaaaatta	196980
atatataata	gttgtatata	tgcttttattt	ttcatggact	tatacataca	tattttattct	197040
gttcttataa	aagtctgatt	tttcgtatgc	caaatttctg	acatttctct	ctctaggcct	197100
gaagaactgt	tgtaattttat	gcatcagata	ggccctcaga	tggaatgaat	attctttttt	197160
cttttatcat	aggtgtaatt	tacatatagt	aagaccgttt	ttaagtgtgt	acagctctgt	197220
aacctcact	acaatcaaga	tataggactc	tgtcactcta	aaacttctca	ccaggttcat	197280
cacccccagc	cactgatctg	ttgagcgaat	acttatttca	aaggagcttt	ttccgttaaga	197340
tccttagagt	ttagatggaa	gggctttcgt	gggtgcattta	gcagatacca	tttcccttct	197400
agactcccta	cttcagttcc	cagttgaatt	aaagaatggt	ttctcccca	gcctgagtc	197460
ctacccttct	tatccctgat	aattattttt	ggaacaaaagt	tacatctttt	gctccacctc	197520
cgccatgggc	ctgggttttct	atgtaacaga	aggaattttt	aaattattgt	tttgtgtaat	197580
cataataact	gggcaagcat	acagctcttt	tcagtgagg	aggattcctc	tcttgtttta	197640
ctgccccattc	aaggataggt	gctatatttt	agctgaagat	cttactaatg	aaatgctctg	197700
taatcatata	acttatttta	agatgtgttt	tgagctcttt	cataatattt	taattcatgg	197760
agaactttat	gtatttttaga	cctgaagatt	ttatattgtc	attatgaaat	gtaaattgtt	197820
tgctttttca	gttaatatat	agttacaata	gaatacggat	ttaaaggctg	ataatgaatt	197880
acaaaattgt	gctatatgac	atactgttta	tgcatcacagt	gttgcattat	ttcatttcta	197940
ggatattgat	ttgtattttct	acttacaaaa	aaacttttta	aaacttattt	tatggctggg	198000
cccgggtggct	cacacctgta	atcccagcac	tttgggaggc	cgaggcgggt	ggatcacctg	198060
aggtcaggag	ttcaagatca	gcctggccaa	catgggtgaa	ccctgtctct	actaaaaata	198120
caaaaaatta	gccggacgtg	gtgtaggtgc	ctgtaatccc	agctactcgg	gaggctgagg	198180
caggaaaatt	gcttgaaacc	aggaggcagt	ggttgcagcg	agcagagatt	gcgccattgc	198240
actccaacct	gagcaacaag	tgcgaaactc	cttctcaaaa	agaaacaaaa	aaactttttt	198300
taatgttttt	gttcaaaaagt	agcagtgaga	tctatccgca	aagggtgacta	ctaaaaatagc	198360
ctttgtaact	actgatattt	atagaatatg	cttaggggtta	gggtataact	cgcttgtatt	198420
atactcatct	accatgtaga	aatatgtaca	tcataaggaa	atataatact	gtttgattac	198480
cttggtgat	catattcttg	ggagagagaa	tctgagtagt	ttgacttagg	aatctaccac	198540
tgggtgaagt	attgtagggc	agagctgttc	catataaata	tgtaggctgg	tgttccacct	198600
cttgagagt	ggtgcagttc	tcagaacctg	gagaatattt	aggggacata	ttgttagttg	198660
cttctctagt	acttttccca	gtagacagat	tagcagtttt	taacctcaat	tgtgcattaa	198720
aaagcaccga	gggaatttaa	aagtaaatat	caatcatagg	gacatttgaa	ttaggatctc	198780
aggggaagggg	ctcaggaat	cagtaatttt	tagaaacccc	acatgattgt	tattgcttag	198840

FIG. 6Y2

gtaataacac	ctactgtcta	ccttgtgggc	ctgccaaaggt	gactgttcct	ggccatgttc	198900
caggcaactg	tagttccagg	ctagggggag	aactggacca	tggaagttag	gctctgtcca	198960
gggtagggga	agggatggaa	ggtagactgt	cctggccatg	ttccaggcaa	ctgtagttcc	199020
aggctagggg	gagaactgga	ccatggaagt	gaggctctgt	gcagggtagg	ggaagggatg	199080
gaaggactca	gtctcttggg	ccaaatcggt	aaggcagcat	ctaagctcct	ctgagaatag	199140
gaaggagagc	aaccaattgg	aaaaagaatg	ggaaacatgt	agattctcct	gcttacctta	199200
ctttccagtc	tcaaagctgg	aagccagcat	tcactgttca	gttattttca	atgacaacaa	199260
gattcaaatc	ttcagttgta	aagttgttaa	aggaaaggat	tagactgaaa	agttaagaag	199320
aacggtagat	gaagagtcca	aagagttgag	gctgggtcatt	taaccattgt	gtggccacgc	199380
cctctccaca	ggtggaacaa	gatgatcaga	atagaaatgg	ccaattctga	tgtgtttcta	199440
cagtgtttca	ctgattacat	tttttaacat	ctgtagcaaa	ccatttccat	aatttttttt	199500
ttttttttta	gagacgaggt	ctcgctctgt	caccagggtc	ggtatgcagc	ggcatgatca	199560
tagctcactg	cagcctcaaa	ttcctgggct	caaagtggcc	tcctgcctta	gcctcctaag	199620
tagcttggac	tacaggtgtg	tagcaccact	ctcagctaata	ttatttcatt	ttattttttg	199680
tagagataat	gcctcgctat	attggccagg	atgggtctcaa	acgttcatag	aaactgggtt	199740
taggtttcta	gaggctggca	gcaattctca	gaggtaaccg	aagcagtcct	cctgccttgg	199800
cctcccagtg	tgttggtgatt	acaagggtgtg	atccaccaca	cctcatcaat	ttttgtttta	199860
atatactcta	aggcttatca	tagttccgag	atcctttttt	ttttcctgag	aaatcctaga	199920
agatggaaga	cagtatgggt	cttttgtgga	tttttgttcc	taagaaattt	tcataaatgt	199980
ctgccaaagga	aaaggaaaaga	gatcaaaagt	gtaattaaat	ctttaggatg	gacatttttt	200040
gaaaaatgct	ttataaaactt	ccctctctcc	aactctgagt	gacttattgt	gtcatactgt	200100
atataacatc	attcaatgtg	taaaatatgt	aagaaaagac	aatagttcac	aatttttggt	200160
tagttttttgc	cattattgat	tatgagcagt	aattcttctc	ttctcttttg	aaggtgatata	200220
ggaaagccct	gtgttttgc	ttccctctgt	cttaaaaacta	gaaacccaca	ttgaaaagct	200280
cttcctatat	tctttttctt	gggactttga	atgttcgcag	tgtggacacc	aatatcaaaa	200340
caggttagtt	tcttttgttt	tttaaaatgg	gttcttctag	ttctctcacc	actaagggtta	200400
agagaacaat	ttgagcacca	gacactacag	tttgcttctg	tcttttaaact	ggaaggggtca	200460
aaacctcatc	gtttgataga	ctgctagttag	gatatttctc	aaggagttct	tcagtgggaa	200520
atagggacga	tgagaggaat	aatacacctc	cctctctcag	agtccttgct	gagtagaata	200580
cctctcagaa	tgccatgaaa	ctgtaggcat	ttttgtttat	tcctctatta	gaaatgaggg	200640
gttttgcctt	tttacttttag	gtttctaaca	ttatagacac	tagtttttagg	ctcttgagg	200700
ctagcagcaa	ttctcagagg	taatgcaagc	ttccccat	cttcccgtag	tcctgtgaaa	200760
gaccagccac	ctccagaagc	ctacacatga	gtcttctcag	ccatactttc	tgcttttctc	200820
aatgcctctc	agcagcgtat	tagaaaaggcc	atgatcgatg	tacctgttac	cttcaggctt	200880
tgcataaggt	gtatatgaaa	cataatgaat	ttcgtgttta	ggctcagggtc	ccatccccag	200940
gttacctctt	tatcttggag	acacttctgg	tcccatatcat	ttcagataag	agatattcaa	201000
cctgtaccca	ccacgtaagg	agaggaatag	gttttagaag	aggagtcagg	gaggcaaggt	201060
attcccagag	ggatattctc	acttggtcca	tacctgagaa	agttgctggc	tggcagttag	201120
gaagatgacc	agactggctc	aattgttctg	gtattcaaat	tattacaata	gaaataactc	201180
tttccacccc	ccccgcctc	tttttttttt	ttgagttgga	gtctogctcc	cgtcacacag	201240
gctggagtg	agcagcgtga	tcccggtcca	ctgcagcctc	cacctcctgg	gttaaaagcga	201300
ttctccttcc	tcagcttctc	gagtagctgg	gattacaggt	gtgtgccacc	acgcccggct	201360
gattttttgta	tttttagtag	agacagggtt	ttgccatgtt	ggccagggtg	gtcttgaaact	201420
cctgacctca	ggtgatccag	ccacctgagc	ctccacagat	gctgggatta	cagggtgtgag	201480
ccaccatgcc	tagccacact	ttcttttagc	ttaaagtctt	aagttagaaa	acttgaagtc	201540
tctctaagtt	actcaagtaa	aatgtgagat	aaaaatatata	cttttgaagg	ccgggcacag	201600
tggctcacat	ctgtaatccc	agcacttttg	taggcccagg	cgggtggatc	acgaggtcag	201660
gagtttgaga	ccagcctggc	caacatgggt	aaacgctgtc	tctactgaaa	atacaaaaaat	201720
tagccgggca	tgatggcgga	cacctgtagt	cccagctact	cgggagggtg	aggcaggaga	201780
ataacttgaa	acccgaaggt	ggaggttgca	gtgagctgag	attgcaccac	tgcactccag	201840
cctggtcaac	aagaatgaca	ctccgtctca	aaaaaaatta	aaaaaaatta	cttagatatt	201900
cattatctaa	atatgaaatc	cttttttaggt	atttaaggag	tagtcaagga	gagttcagtc	201960
tgggaggatg	ctccagggaa	tgcaggcaac	aaaggttttg	tttttttttt	aactgggttaa	202020
ctcagatcta	ctagaacagg	gtaagggagg	ccacagagta	gacaccatga	gcaaagctaa	202080
ccctcctgag	ttgaaaaaat	tatggacgag	aagttatcat	tgaattaaac	tgttggcaga	202140
catatccaaa	gaatatcgca	aggatttggt	ccctttatgc	atcctgagac	agatgaatgt	202200
gtggaatggc	agctgggtgg	caacagagcg	aatatggcat	ggtggtgata	caggggaata	202260
gtttcatcgt	gttaaaagcc	atggaacaaa	gatacataat	ggctgctctg	cagaaaaaatc	202320
cacgtcccct	ctccaaaggg	cctgtttttac	tctgatgtaa	aaattgggtc	agataaaattt	202380
tcatattaag	ctttttgttg	agtaaacttt	tgtaatagtc	cccaaaactc	ccactagaac	202440
agggtgagaa	ttaacgtttt	attcatactt	aggacttaaa	taattttagt	taagcaagtg	202500
agtatgagaa	cacatctgtt	tccagtcttc	tatcattgtc	ttatataaat	tctctggttt	202560
tctcctcaca	gtaactcagt	gaggaagatc	ctagtgtcct	catttggcac	gtatggatat	202620
gacagcttga	aaggggttag	attgattccc	aagatgacac	actgtaagtg	gcagagtcag	202680
gagacacact	taggctcttc	tggcctctaa	gactttcttg	ctcactgtgg	tatactcctt	202740

FIG. 6Z2

aatcactacc	tggggttttaa	ataatatataa	taaccttgc	gattaaaaatc	agcttaattg	202800
tagcttctct	ggaatccata	tcttagttgt	ttgacagttt	tcggttgagt	gtcttctgtg	202860
tgtaggaac	tcaggcactg	gaaatagtgt	atctttgcca	aatttactaa	ttaggttagag	202920
agataatata	cgaacacata	atagagggtcc	agtgcactcg	taattaatct	gatctttggg	202980
ctgcttaacg	ttagctttga	atgcaagatg	ttaaatgcgt	tttagagata	tatagcacia	203040
actgtgagag	ctcaagggag	ggaagccact	agccgctttt	gtttgctttt	ttgtttttta	203100
aaaataatct	tactttgttc	taaaaataaa	agtagttata	gagggaaagc	taaaatgaag	203160
tgacgttttc	ttaaatatgt	tttaatatgt	cataacttaa	aacttatttc	cacttaatct	203220
gaaggagaac	tgtccagcaa	attcctttgt	ttttgtgaag	ctgttttttag	tgccagcata	203280
agggtctttt	actcaacttg	gaaagtgtaa	cccagagtca	gttaaaaaaca	tagtcttcag	203340
aggcagatct	caggtctgtt	atctctatg	gtactctatg	tgtcactttc	cccatctgta	203400
aaatggggat	aagaatagca	cctgcctctg	agagttgttt	ggaagatgag	tgtccagtgc	203460
catgcccttt	gcacatagtt	taagtgttca	gaaatgtcag	atgtcatgtg	gagaattaac	203520
acttacttgc	tgagacagtc	tcctttttat	aaactaaaca	gtaggagcct	ttacataaca	203580
attatctttg	aaaatttaag	aatttagcag	aaatcagtgc	atctgttgat	atctttatgt	203640
tgccttgcct	ttaaaaatgt	aacctccctg	actactgatg	tttttaacag	acagtgcctc	203700
ctcacaaagt	ttataagtat	ttgctattgt	ttagaaagga	agcttgtatc	tcttaagtag	203760
ctgctcttta	aattacaaat	atttttatta	aagtggatgc	agttgaggtt	tagtgtacat	203820
ctttaaaggt	catcttttta	gatggcgctg	ctctcaagta	ttcagactaa	agtgcacatt	203880
tagaacttgt	gtaacctgtg	aaaacaaaaat	ttgttcacaa	ttaatgctgt	gtgtgtgtgt	203940
gttttttttt	taaggattaa	aaaaagttaa	gttgatgtga	ttcctgattt	tatgtttgga	204000
aacatcccct	tttcattttt	ggttgctctg	aatggctagc	cagtttgagt	tatttgagta	204060
agggggtgagc	tcttaataaa	tttgacaac	ttagaacagt	ggttcttcac	taagggctat	204120
tttttccccc	ttgggacatt	tggcaacatc	tacagacaac	tggatgccgt	tactggcatc	204180
tggtgaggag	aggccaggga	tgatgcttaa	catcctacag	tgacacaggac	agtgtctcac	204240
agcaaagact	ctctggtgaa	aaatgcagtg	ataccattga	ggaaccctgt	ctttttttct	204300
tgcctcatct	catagttgaa	agatatggga	aattaacatg	gagcatcttc	acagagcttc	204360
tttacttagc	gtaggaggga	acattgccat	attaacatga	tttggggaaa	taagaaagta	204420
tgaatcacga	aaaaggggag	gaatactttt	agacattggt	ttaaattaat	gtaaatgcat	204480
ttaacgttaa	tgaatttggt	atgtcatttt	tttataggca	tatgaagagt	ctggtcacct	204540
ttacaaatgt	catccctgag	tggcaccac	ttaatgctgc	ccattttggt	ccatgtaaca	204600
attgcaacag	taaatcacaa	ataagaaaaa	tggtattaga	aaagtgagtt	aaaattgtct	204660
tataattttt	agtacaaaa	gaagggtgat	ttacattttt	cttaatgtgt	aggattgaaa	204720
atggtgacaa	caacttacct	ttctgaaatt	tgagttaaca	tatatctctg	ggttgccagc	204780
tgccctcgctc	tatctggcca	gtgagccac	tgtcacggtg	aagccactga	aaagccaact	204840
taggctgact	ctctggcccc	actctcctag	tgtctttcct	tctttttgcc	ttttttctcc	204900
ctttaaggat	atcaagcttc	agtttttctc	tcctctgcca	agtgtatgga	gtttctagaa	204960
ttctgggatt	tccttaatca	gattttcaaga	actaagatga	ttcaaagata	agccacaggg	205020
tcactctctc	gaatttccat	cttctcctag	atctcagcat	gctaattcct	catctcttgg	205080
aaagctatct	agtggccttg	agcagatata	ttttcattgt	attttgccag	cttttctgtt	205140
tgtcctcagt	tggggaggtt	ggtcagcatt	accttttcca	gtattaccag	agaaccatct	205200
gtttaaactc	acaggctcagt	tccatctcag	gcggtttccc	tctgtctcat	taatgcactc	205260
acacatgtac	acaacctctc	tactcttcat	tttcagtcct	atcgtacatt	aaggaaatgt	205320
tttgaggctc	aatttgatgt	aataaagaac	cgggaaacatt	aacctttatg	cccttgaatg	205380
tgcagaaaac	cttctcagaat	ctttcctaaa	ggtttattct	cattgaagta	ataaatcttc	205440
agtttatcag	tgcttacagg	ctcaaaaggg	aaaaagggca	gtagtcacct	gttccctcct	205500
ccaggatctc	actttaaac	ttcaaatata	ggtagtattt	acttttactt	ttcaaatgta	205560
tgtgcctatt	ctaccgtaat	gcagtcctgt	ctccttttat	agtaattgag	actaggggtc	205620
tcacaccaac	acctgggccc	catctctgtt	tagcctttcc	ctgtcctttc	aatgcaattg	205680
cgtattttggc	taactcagta	ctcgggtgtt	gcattgttat	taatatacat	gtgttattcc	205740
ctcttcagcc	aagcagtata	tatagttagg	tttcactttt	acaattctta	tttttccggg	205800
aattgttatt	tgccttggtt	tcatttggtt	tattatgtac	tgtgagtttt	tgccaaatac	205860
tttaagact	tattaataaa	ttttcaatac	tcagatgctt	cacagttttt	tactctgttc	205920
ctctcccctt	tttttccctg	aactctttcc	tgccaccttt	cactctttgc	tgcatgtctg	205980
gctgggttcc	ctctgggcct	gcagcatagg	gtgctcttta	ttatgtacac	acttccagtc	206040
actatcgtag	tttttagccc	aaggcctcat	ccccacattc	tatcacatct	gttgcccata	206100
aatatccagt	cttctagggg	ttctctggga	aaaataagct	cttctttgtc	atcaacatat	206160
gcactccgta	gtactcatgt	cttcactttg	ccggttctgc	tgggtaagggt	gccacttctc	206220
tgtttgcttt	ctgtcctcta	aatatttgac	ttcttatttg	cttattttcc	tttctttgtc	206280
cttttggact	catatctttt	ttgcccctoa	ctattatttg	atagcatttg	tgtaggaggg	206340
cgaagtggga	aggaagagga	ggtgtctgta	tctgtctgaa	gattacagaa	gtctgtaatc	206400
tgtcttggct	gccaggtgtc	agtttttgata	tgtaaatggt	gatgatgagg	tgaggagagg	206460
agcagcagag	catggggctc	gccatcctgc	cttggaacct	ggcctgcttt	agggtgcttg	206520
gtgtatatga	tttcatctag	ctgttcatac	ctgctttttc	ctgtgcccc	gcactgaaca	206580
tagactcgta	ccattgtttt	gtgtaatctg	tttaattgggt	gcactgcagc	atatataatt	206640

FIG. 6A3

tttaactata	caaataagtt	gcttccctta	aagattcatg	ctctgatctg	gaaatggatt	206700
cattaggtaa	aagtctttta	atggaaaatg	tgttttgagt	tccagtgggc	caatttatga	206760
gcagaattta	taatgtgggc	atctcctggt	ttcttcaaaa	gtaaattgaa	ctagtgtatg	206820
aagtttctact	taaatttttaa	atgccaaagg	ctttatataa	gtcctttgtg	tttttttaaa	206880
tttgaaattt	gtataacttg	atgtgtttgt	gtctaattgga	atttagaaat	aaatttaata	206940
tagtttttag	ggctaacctt	aaagtaattg	ggttcacatb	ggtgtcatat	gtaattaaaa	207000
catatagaat	cctaaaaact	aattaagttc	cttggacacc	ttatctcaca	taaccacat	207060
ctctaattgc	tccccattgg	gaaaagagtc	cattgataaa	tcagggtgaat	tatgcctagc	207120
gggccc aaat	ctgctacttt	tctttaagtt	gttttaggag	tacattcaga	ccatgggtgac	207180
atggagcacc	aagaacttag	aatcagattt	cattttactt	gacaaactct	tgaaagggtca	207240
ctgccacagt	ctctcttgag	tgcaaggcta	tggctatgct	ttgtagcaca	gggacgcgat	207300
atctctctgc	tatctttggg	tagcagaggt	taacacagct	cccttgtgct	ttctttctct	207360
cttttctatt	ttcttttctt	ttcctaagga	tagatcttta	aataggagga	gtttaacccc	207420
atgttaggtg	aattcaaatg	gatcttagcc	tgatgtctct	tgttctcttt	tggttccagt	207480
ttggttaatt	cctttcatcc	aattttccag	tggttgaggg	agaacctaac	ttgctctcct	207540
cgactctgag	catcatcctt	cactgacagt	tcaggcattg	tgggtaggaa	gaagtctgag	207600
aacaaaacct	agggataaag	tttagtagag	atggggttgc	accatggttg	ccaggttggt	207660
ctcgaactcc	cgacctcagg	taatccacct	gccttggcct	cccaaagtga	ggctgggaaat	207720
aagacatgct	ggaattgtaa	gtaggacact	agagtctagg	ggaatcaaag	aggaaaatga	207780
acagaaaagg	gaaggggag	gatattattt	gattgactcc	aagatgctac	tgtttgtaag	207840
ttttaccatt	ttaaaaatat	gccattaaga	aagaaatgct	ggcggggcat	ggtgggttat	207900
gcctgtagtc	ccagcacttt	gggaggctga	agcggacaga	tcacctgaga	ctaggaattt	207960
gagaccatcc	tggccaacgt	ggtgaaaacg	catctctact	aaaaatacaa	aaatcagctg	208020
gatagtgtgg	cacatgccta	ttgtcccagc	tactcaggag	gctgagacat	tagtactgct	208080
tgaactgggg	aggcaaagg	ttcagtgagc	agagattgtg	ccactgcact	ccagcctggg	208140
caacagagtg	agactgtctc	aaaaaaaaaa	aaaaaaaaag	agaaatgctg	cttattttaac	208200
tgtgttctgt	caatgttaag	gtgtatcccg	acttcagaga	tgtttaacaaa	tgggaaaaaaa	208260
tttggaattc	attaggcatt	tggaaacttac	aaagtttcgg	ccgggcatag	tggctcatgc	208320
ctgtaatcac	tttggagggc	caaggcgggt	ggattaccta	aggtcaggag	ttcgagacca	208380
atctggccaa	catgggtgaa	ccccatctct	actaaaaata	caaaaattag	ctgggtgtgg	208440
tggcatgcgc	ctgtagtccc	agctactcag	gaggctaagg	caggagaatc	gcttgaaccc	208500
agggggcgga	ggttgccagag	agctgagatc	gtgccctgca	ctccaacttg	gacaacagag	208560
tgagacgcca	tctcaaaaac	aaacaaaacca	aaaaaaaaaa	aaaaatttca	tagttacaga	208620
aagtagtatg	gaggccatcc	cgagattttc	gacatggtag	taaaactctg	cattatggct	208680
ctgttctgca	ttctctctgt	ttctactccac	atcagaccc	atcagaccc	ggatagcttt	208740
ggtgtactgg	tcgatcttgt	ggcagtaagg	ctagtgtaat	taagaggata	ttttaaaact	208800
taacatataa	ttgctctagt	tggtgtctct	tttttgctgg	ttaagaaaat	caaatttcta	208860
tcctatctga	atctcatagc	agactttgga	gatttctgac	aagtcatttc	ttactacctt	208920
ggggaatgta	cttgtactca	gctagagtct	gagtatcttc	tacatccagg	gaattgggct	208980
gagtgtggat	tttggctttg	gcagttttta	cttttattaa	tttgcaaaag	aatagaagac	209040
ttggaatgta	caagaagcat	aaaaatgtgt	cagggtggtt	tacatgcgtt	atztatcacg	209100
ttaatatgtc	ttaagatatt	ttccacgtgt	aaacttatgt	aaaggcagga	aactagttag	209160
atctcatatt	ctagggatca	agagattgtt	ttagtaacta	gcctcagaaa	gtatcttgaa	209220
aggtattata	taaggccaag	gaactaaata	ttagtaaaaga	gtcaggccag	gcgtgggtgg	209280
ttatgcctgt	aatcccagca	ctttggggag	ccaaggcagg	cagatcactt	gaagttagca	209340
gttcgagacc	agcctggcca	acactgtctt	tactaaaaat	tactaaaaat	agtagtgtgt	209400
ggtatggtgg	cgcattgcctg	taatccagct	cctcaggagg	ctgtgggtgg	agaatcactt	209460
gagcccagga	ggcggagatt	gcagtaagct	gagattgcac	cactgcactc	caacctgggt	209520
gacagagcta	gtgtctgtct	caaaaaaaga	aaaaaaaaaa	ggtcagatag	gtgcctaaag	209580
cctgtgtgtc	tcgctatgag	aatacatctc	aagttttact	gtgggttcatt	gattcagaca	209640
tgtagttcac	attttaacct	gtctgaaatg	gtaatatgtg	aaattgatgt	catgatatag	209700
tttaattggc	agcatgtttt	catagtggta	cattttataa	ttagtgaat	cttagatttg	209760
atgaaataga	tatgattttt	taaagtggga	aagtttagtg	ttatagacag	tttgcaggac	209820
tttttatttt	gtaggtactt	aaattttgag	gacttaatta	ttctctaata	aagtgattga	209880
caaggattaa	tgtataaatt	ataccttgct	agtctgaaca	atctgcagtt	tggaacattga	209940
ttcaaattca	tttaggctga	ataaattttg	ataaactaag	taagttttga	cagctatttta	210000
aatattggga	aaggggatat	tcaacatttt	tcttacctcc	tgagagcttt	gttaaaattta	210060
gttatttgag	accatttggtg	ttctattttc	tgggttcagca	tggtgtctgta	atggtaaaat	210120
acaattttga	aattatagtt	gtcttgaagt	taataataaa	ttgaccaata	tggtgtattt	210180
ttttctctac	ttagttacaa	attgaacttt	tcctaagtag	aacttttaat	ttgacaggcc	210240
ccctttgctt	cctgaggtaa	ctgaaatagg	ccaaattaat	gcttttttga	atatcttagg	210300
ttgtgtgctt	tctttcacat	gttacctacc	ccacttaaca	aaagcaatta	atctcagcac	210360
ttgatgccaa	agaaaattct	aaaaggtctg	gattttttcc	ttggatttta	caaagttagt	210420
acaatgggac	ttttaagaca	aagctgcatt	gctgcttaca	gagcaatttt	tgtttaaatgg	210480
tctgtgttag	agtcatactg	catgatgact	tccaactgtc	tgggatacca	ttctgaaaag	210540

FIG. 6B3

ggtttagtggt	tacatacttc	ttagagagag	ttctccattt	ctaattaagg	cacacatctg	210600
gaggtgctca	agaaaaatta	gtgcagttag	ccttggaagt	gttatgtgtg	actagttcac	210660
ttcagacatc	ttttgtataa	tcagacacat	ggcattaaat	ttatttaact	tctcttgctt	210720
ttctctccca	cagagtatct	cccatattca	tggtgcactt	tgtagaaggc	ttaccacaga	210780
atgacttgca	gcactatgca	tttcattttg	aaggctgtct	ttatcagata	actctgttaa	210840
ttcagtatcg	agcaataaat	cattttataa	catggatttt	agatgctgat	ggtaagtgtt	210900
tagaggtttt	cttttaagat	aattggcata	gaaactaaat	tctagcatgt	ggggactttt	210960
tggtttttgt	ttttataaaa	aagacaaaact	ttgtcctgac	tctttctctc	tccattctcg	211020
cctttgcctt	ctgccccctc	tcgcatctat	taaaagtgat	ggtttttagta	tctgtgtcca	211080
ttttttccct	tccttacatc	atgtattata	ggtaaacaca	tgcgcatgtg	tgtattttctc	211140
tttttagacaa	aggatgagat	tactactgtt	agctcagttt	ttttttccct	acttaacatc	211200
tttgcttttta	tttttttagac	atattttctaa	gactattaaa	cattagactt	acgtagccct	211260
tctgtcattg	tgaaatacat	agttttactaa	cagctacat	caagataaag	cctttatttta	211320
aataattaaa	cttcttagtg	gaaagctaag	taagcacagt	ttatggattt	tgggaattttt	211380
tgccctgcat	ttgtctgata	tggtaaaata	ttgagtttgt	ttttctcata	atgttcactt	211440
tgtcttagac	aagataactc	aatcccccta	aagggttgta	tcaagccatt	gataagggtc	211500
cactttgata	taaccattttt	ctgtttattta	gacactcttt	cacacttcct	attttccctc	211560
tggggatggg	ttgaatggat	gacacaatac	catattataa	aagcacttta	caaactgtaa	211620
cttatgttat	aaatgtaatt	attaccttaa	ggttttaccc	tgtttcagat	ttgagtggaa	211680
gtagttcttt	acaatacaaa	acaacttatt	ttactttttt	ttgcatttca	aagaatgatc	211740
aatccacttc	aggtgcagca	tggtttccaa	ccctgcacgc	atggaagaat	cattttattta	211800
gcttctaaaa	atgtgcaggc	tgtaacctag	accagccttg	gggattaggc	ccaaatatca	211860
atgttggttg	tttttggtat	tggttttttg	cccgctacc	cgcccttcct	tcctctgctc	211920
ctctctctca	ttctctctct	ctctctctct	ctctctctcc	ttctttgctc	cttcattcct	211980
tctctctctc	tctttttttt	ttgagacagc	atctcactat	attgcccagg	ctgttctcaa	212040
actcctgggc	tcaagtgatc	ctcctgcctc	agcttcctga	gtagctagga	ctacaggcac	212100
atgctatggc	aatactgttt	taaacattgt	tttcaaggct	cccagggtga	ttccagtggt	212160
ggtcatgtgg	tagagaacca	ctgacacagg	caaacaaagg	atacataaag	ttgtctattt	212220
aatgggttag	tgcaggtagt	agataagagt	gtagccacat	aaaccacatg	cttagtgaac	212280
ggttttgttt	tgtgtgtatg	tgagggatta	gcatctctga	gtatattttg	ttttcccttt	212340
tgaaacttat	cagagaattc	atatgtctgt	tatgtgacta	atgctcacat	taaaaaaagt	212400
tatgtgactt	tttttaattc	atatgtcttt	tttaattcatt	tattcattca	tatgtctgtt	212460
atgtgactaa	tgctctcata	aaaaaagtaa	tgctcagttt	acttttttta	tatcagatca	212520
tatatatatg	tttttttttt	tgagatggag	ttttgctctt	gttgcccagg	ctggagtgtg	212580
ttggcgcagt	cttgtctcac	caccacgtct	gcctcccggt	ttcaagtgat	tctcctgctc	212640
catcctcctg	agtagccgga	atacacgcag	gcgctaccat	gcccggctaa	ttttgtattt	212700
ttagtagaga	caggggttct	ccatgttggt	caggttggtc	ttgaactccc	aacctcaggt	212760
gacccacccg	cctcggcctc	ccgaagtgtc	gggattacag	gcatgagcca	ccgcacccgg	212820
ccatatctta	tatttttaata	aatattttaa	tttgggtctgt	aaatttttct	ttttggggaa	212880
tgtgttttaa	gtctgtgttg	agtcctagac	atttgttgtt	ctcagatagt	cactagtgtg	212940
accttaacat	taaccagcct	gttggcaact	aaattggcct	gaagtgacaa	ctaaggaaag	213000
gtctctttct	cctttcttaa	tctttgcatt	ccttaagatt	agttctttgt	aggaaggctt	213060
tgaagtctgg	tggcaagtac	cctttatccc	tcacaatctt	aagataagggt	ctttctgagc	213120
attaaaaagt	gactgtggga	gatatgtcaa	atgagttttc	tgtgtgtgct	ctgagaaatc	213180
tttttttcaa	aaaaggatag	atgtacttgt	ataaggaaaa	gagaaactga	gcgcactttc	213240
aatattttaag	taagtgtctc	taacatgttt	tgcaacataa	aatgatgacc	actgtgttgg	213300
tcattacttc	tctactgcta	aaacaatgtt	ttctaaaata	atatactcct	tagaaaaaaa	213360
tatagtgtct	tgggtgtgca	ctgttgtaat	ccaaggaata	ggaaatgttt	tgtagtaagt	213420
gcgatgggtg	ttgacatcgt	gatttattaa	tttatcacat	ttggtttcat	agaaatagag	213480
taagctacgt	atttgcctgt	ccgcaattac	catgacatta	cacttgtatc	tatttctgtt	213540
tcatagatgt	gtagatattg	atatatacag	tggaagtatg	gattgttttg	ataagtttct	213600
aatgaaagta	cagatatttg	ttgattattt	atgaagaaag	gttgttactc	atccaagccc	213660
gtgggttagct	tttcccaaat	tatcatgtgg	tagtaagtaa	aatgtaaaga	aatataccct	213720
cccttaaccc	cacaccacct	gttagcacct	agccaccttc	ccttacttct	cagccgtact	213780
ttttgtattt	ttttgttgta	gtggtaaaaat	ataaataaca	taaaattttac	catttttaaca	213840
tttgtaagt	tacaattcat	tggcattgaa	tacatttgtt	gcaaccacca	tcaccatcag	213900
gactttttca	tcaaccocaa	cagaaactac	tcatttaaca	ataactccgc	atccttccac	213960
cccaaagccc	tggtaaccac	tattctactt	tctgtctctg	tgaatctgtc	tattctagat	214020
acctcataga	agtggaaatc	tacattattt	gtccttttgt	gtctggctta	ttttactcag	214080
catattttca	agattcattt	gtgttggtgg	atgtagcaga	atgtcattcc	tttctaaggc	214140
tgagtagcat	tgtatgtatt	atccatttat	ctgttacgga	catttgacta	ttgtgaataa	214200
tgtgtttgtg	aacattgggt	gacaaggaac	tgaaagtccc	tgctttttcat	tctttttggc	214260
ataaacctac	aagaggaatt	gctgggtctt	aacggttaatt	ctgtgtttta	tttttggacg	214320
aactgccaga	ctgtttccac	agcagttgta	ctatttttaca	tcccaccag	cgttacacaa	214380
ggattccaat	ttctctacat	ccttgccaac	atttgcattt	ttctattttt	ttttaataat	214440

FIG. 6C3

atccatccta	atgggtgtct	tttttttttt	ttaaaggaat	ggtttaaaaca	ggttaccttc	214500
ttactcctca	ttcatgcttt	agttgactac	ataaggaccc	ctctccctat	tggcaccatt	214560
gaaattgttc	aggcaaaaaa	aactgccagc	gacacactgc	tttaagtaat	ggactttttcc	214620
caagtttttg	attaatatatt	cagtatcttg	tagtgcatcc	tactgctagt	ttttaaaactc	214680
ttcccttgtc	atctatcatt	tcattctctc	ttgacaaatg	tgaaaatgga	agctcagaaa	214740
taaaaacaaga	attaaaaacga	atagtgatcc	ttcaggtaac	aagcttcatt	tatcatgaaa	214800
acatatatgt	atgaaacatt	ctgttttctg	atgttattgg	ataaattagg	tgataaccaa	214860
attctaagtt	ccaaaaatta	aatatactct	atctaaggac	tttaacatgg	cagacaatgg	214920
tgacaaggtc	aagaacatgt	tttagagtct	tctccttttg	tcggtattca	atgatacaac	214980
agttgaaaag	gccagaagaa	agttaacctc	ggatgggtgg	ttttgaatat	ctaaactttca	215040
cttctttccc	atcttccagg	aagttggctg	gaatgtgatg	acttaaaagg	cccatgttct	215100
gaaaggcaca	agaaatttga	agttcctgct	tcagagatac	atattgttat	ttgggaaaga	215160
aaaatatccc	aagtgcacaga	taaagaagct	gcctgccttc	cacttaaaaa	gactaatgac	215220
caacacgctc	tcagtaatga	gaaaccagta	tctttaacat	cgtgttctgt	gggtgatgct	215280
gcctcagctg	aaacagcctc	agtaactcac	cctaaagata	tatcagttgc	ccctcgtact	215340
ctttcacagg	acacagctgt	aactcatgga	gatcatttac	tttcagggtcc	aaaagggttg	215400
ggtgacaata	ttttacctct	gacacttgaa	gaaactatcc	agaaaacagc	ctcaggttca	215460
cagttaaatt	ctgaagcttt	cctgttagaa	aataaacctg	tagcagaaaa	tacaggaatt	215520
ctcaaaaacca	atactttgct	atcacaagaa	tcactaatgg	cttcttcagt	atcagctcca	215580
tgtaatgaaa	agcttattca	agaccaattt	gtggacataa	gttttccatc	ccaagttgta	215640
aatacaaaaca	tgcagtcagt	acagctgaat	acagaagata	ctgtaaatac	taaatctgtg	215700
aataaactctg	atgctactgg	tcttatcacg	cgatggaagt	cagtagaaat	tgagaaggac	215760
gctcagttaa	aacaattcct	tacaccaaaa	actgaacaat	taaaaccaga	acgtgtcaca	215820
tctcaggtat	ctaatttgaa	gaaaaaagaa	actacagcag	attctcaaac	cacaacatct	215880
aagtcattac	agaatcagtc	tctgaaagaa	aatcagaaga	agccattttg	gggaagttgg	215940
gttaaaggct	taataagcag	gggtgcttct	tttatgccac	tctgtgtttc	agctcataat	216000
agaaaacacta	taactgattt	acaaccttca	gttaaagggg	taataaattt	tggtggcttt	216060
aaaactaaag	gtataaacca	gaaggccagc	cacgtatcca	agaaagctcg	taagagtgcg	216120
agtaagcctc	ctcccacag	taagccacca	gcaggccctc	catcgtctaa	tggcacagct	216180
gcccacccac	atgctcatgc	tgcttcagaa	gttttggaag	agtctggaag	cacctcatgt	216240
ggagctcaac	tcaaccacag	ttcttatggg	aatggtattt	cttcagcaaa	ccatgaagac	216300
ttggtggaag	gtcagattca	taaaacttct	ctaaaaactc	gtaaaaagct	aaaggcagaa	216360
aagaagaaat	tagtctctct	tatgtcttcc	ccgcaaaagc	gaacagttcg	aagtgaaaat	216420
ctagaacagg	tgccccagga	tgggtctcca	aatgattgtg	aatcaataga	ggacttggtt	216480
aatgagctac	catatccaat	tgatattgcc	agtgagtctg	catgcaccac	tgttcctggg	216540
gtttccctgt	acagtagtca	aactcatgaa	gaaattttag	cggaattatt	gtctcctaca	216600
cctgtttcaa	cagagctgtc	agaaaaatgg	gaagggtgact	ttaggtattt	gggaatggga	216660
gatagtcata	ccccaccac	agttaccaagt	gaattcaatt	atgtttccca	gaacacacat	216720
ctgagcaggg	accataatta	ttgtagcccc	accaagaaaa	atccatgtga	agttcagcca	216780
gactctctga	caaataatgc	ctgcgttaga	acattaaact	tggagagtcc	gatgaagact	216840
gatattttcg	atgagttttt	ttctcctcca	gcattaaatg	ctttagcaaa	tgacacatta	216900
gacctacctc	atctcgatga	atatctgttt	gagaattatt	gaattaatgc	ttgttaactt	216960
ttttcatata	atatttatta	ttattagaag	aaccttacaat	gtgttcagg	agtgtttata	217020
cactggcactt	gtgtgtaata	ttgtgtaata	aaatgcaagg	aaatgcaagg	tttaactctt	217080
ggttctgccc	atgaagcatg	taatctttct	tacacattaa	aatcactgaa	tgtgttctcc	217140
tttttggttt	cattttggtc	ttgtgagagt	atgaggattt	caaaatgtta	aagatgaaaa	217200
gtggcgtcta	gtttctgaca	gtttgtacag	ttggatgcat	tacattttta	gatttgaaagt	217260
tttggttatg	ttagtgttat	gagtgatctt	tgtggtgggt	ttcttccctt	ggaaacctgt	217320
tgtcgtggc	gctttgccc	cgggtgccga	gttcttctgc	tgtgtccaga	tatgcagaca	217380
aatgaagggt	gaagaagaag	aagaggagct	ttatttagtg	ttagaacagc	tcagaaggag	217440
accacacagt	agcagctccc	ctgtgtcggc	gggcaggctc	tcctcaagt	gttcagctct	217500
cagcagagaa	aaggccctgg	agagggtgac	tcctctcagc	tctcagcaga	gaagcagccc	217560
tggagaagggt	agcttctgtt	cgcaggcaga	ttgtccagag	gtcctgctgc	tctcagacgg	217620
ggccctggag	aggatagctt	ctatccatag	gcagggtggt	ctgccgtctc	tacagggtctc	217680
tgaagctcct	agcagagagg	gtagctcctc	cctgttgctg	gtcgtcccac	cctctgctca	217740
gttctggctg	agcctggggc	attttacggg	cctcggggga	ggaagtgcac	acttactggc	217800
ctggaaaagg	caccagttcc	cactcctaca	gggtgggactg	gcagcctggc	cctcagcctt	217860
caggccctcc	ctgttcatgg	cttcaggct	tacccccctg	ctttgatctg	agagctgggtg	217920
ccaatagcag	ggagaagcca	agctgcagag	gcaagcactt	cagagcctgc	aaaagcaggc	217980
ccccaaaagt	gcagggatgc	ctgagtctgc	acccgcaccc	aggagggtgg	agatcttgcc	218040
tgtccaaagg	ctgcagccgg	aatgatagca	ggctgactgg	agcacctgcc	accatcatca	218100
gttcaagagt	ttatgcagat	ttaagttgta	tacggatatat	gaatgtgtga	cagttttcct	218160
tatgggtgtg	tggccttctg	taagagccta	cgcctgtttg	ttacaccggg	agagtgtctgt	218220
ggaatgtaaa	ctttccctat	gtcacttatc	tcctttatct	ctccatacag	aggagggcaa	218280
gaaaccttgt	tacttgaact	ttagtaatgt	taagtgtatca	ataaatctat	aaataaatga	218340

FIG. 6D3

tagcagaaaa	aagttacctg	tttttgtgat	gatgtacaaa	ctttacatgt	tatcacaaat	218400
accatctttc	ttcccaagac	atttactttc	gtaaccaaa	tgggacacca	tctaacagtt	218460
ctgttttggg	agagagtaat	aaccagtgtc	tgtgaggcct	gttagatgtt	ggttgtgata	218520
tatgagatag	atgttttttc	atttagacct	caacattcct	gtgcgtgaga	tactttttatc	218580
acatctttaca	gataaggaga	ctgtactcat	tcagtgtgtg	agctgagatt	gagtagagtg	218640
gctattacag	cagttgagtg	ctgagcttat	caatatatgt	tccactcctc	aggcttcatt	218700
taaagtagga	tgcccaaaaca	gcaccactgc	cgtagagatt	tgagttaaca	gcagttactta	218760
ctgagggttta	aggctggcag	ccagtgtcct	tgcagtaaaa	ttatttgcta	gggactcagt	218820
acttcataat	ctatttgtca	gattttactcc	taagcttctg	tggtgtttta	ttttttttctc	218880
gacaaaaagta	gtgcatattg	tcaaggaaaa	actaggaaaa	taccaaaaaa	aaagatttttt	218940
gaccatgcat	tttaatactt	agtgactaca	aacattttcc	tatttttatgc	atatagatttt	219000
taaataaacg	tgagatccta	ttgtatctgt	tttaatggat	aaacattggt	tcactgtttt	219060
aagattctga	ggtgatttat	actgtcttgc	cattgttaaat	tgacagcagt	agccttggtg	219120
ataaattttt	gcatggatcc	aagttttgtt	ttccaggagt	ggagtgtgct	ggtcaaagga	219180
aatgcacatt	taaggttttt	tggtgattgc	atgactgact	tccctggggc	ctcgccaaca	219240
ctaggtagta	gtattgggag	gaagggggga	ggtgctccaa	ggtgctccaa	gattactagt	219300
gagcctgaac	tttttctata	actattgtcc	acttgagttg	ttgtttttgtt	tttttttttgg	219360
tggaggcggg	ggtgggttta	agaattgctt	atcctttgct	tgtactaatt	atccttttcaa	219420
caaataatttc	tagattactg	ctaaggacca	agcactgtta	tcagcctgag	ataaggcagc	219480
acactagaag	gaaatccttg	ctccttttga	gtttgccttc	caaacatgga	gatcaatata	219540
taatgttagg	tagtaataag	agatacatgc	agtttagatt	tgctatttgt	agtagtttatg	219600
gtcaataaag	ttgccttgaa	cactgaatta	gtataaactg	aaataactgtt	cctaggggaa	219660
ataggttcct	gctagcctgt	ggtcatgaga	tttttgtcaa	acaatcacta	tataaccttt	219720
tctgtttctg	tttaaagaca	tgttatttga	tctatatggt	tgattcctta	cattaacatg	219780
gccaacagca	ctgtaactca	gcctgaacga	agcttatctg	acacatggtg	ttctccataa	219840
ggcacatcat	agctttctgt	gcttaggaac	actagacggc	acttcagcac	tgactttgag	219900
gacgtttttaa	acagtgaatc	caacaaaaag	cacaaaaaaa	tgcaacaata	ggctggggcaa	219960
ggtggctcac	gcctgtaatc	ccatcactta	gggaggccga	ggcgggccga	tcacgaggtc	220020
aggagatcaa	gaccatcctg	gctaacacgg	tgaaaccccg	tctctactaa	aaatacaaa	220080
aattagccgg	gcgagggtgg	aggcgccctg	agtcccagct	actcgggagg	ctgaggcaag	220140
agaatggtgt	gaacctggga	ggcggagctt	gaagtggacc	gagattgcgc	cactgcactc	220200
cagcctgggg	gacagagcga	gactgcgtct	caaaaaaaaa	aaaaaaggaa	caataacaaa	220260
gacactagtc	ccccaaaaat	acacttggtt	acagtgtgaa	ctgaaagagg	aagggtggagt	220320
attgacttgt	ttgacctcag	ctggaaatgt	gcacgtcctg	tgactcaaat	ttttctctgt	220380
tctgtgcatg	catgtccacg	aataaccaca	agaagcactg	aaagcattga	tttttaggggt	220440
tacaaattaa	tttttagcaag	taaatgaatt	cacaaatacg	gaatctgtga	gtaatgagga	220500
ctgattcttt	tttttttttgg	agatggagtt	tcactcttgt	agcctaggct	ggagtgcatt	220560
ggcatgatct	cggctcactg	caacctccgc	ctcccggtt	cagcctccac	ctcccggtt	220620
caagcgattc	tctgcctca	gcctcccgaa	tagctgggat	tacaggcttg	caccaccatg	220680
cccggtcaat	ttttgtattt	ttagtacaga	cggggtttca	ccatgttggc	caggctagcc	220740
tcgaactcct	gacctcaggc	aatccaccca	cctcagcctc	tcaaagtgt	gggattacag	220800
gcgtgagcca	ccgcgcgcgg	ccgaggactg	attccttatgt	cagatggcac	taaatgctat	220860
ggagaagagg	agtggatgag	agggagaagt	attttagacc	aggtagactt	ggaagggttt	220920
ttggagggtg	gtgatgtttg	agaagaggct	tcaataaagt	tagggagctc	gccatgtgat	220980
tgcaagagga	gcgttccagg	agaacaaaag	tcatgaagag	tgagtgtctg	gcattgtctc	221040
ggtctgtttg	ggctgctata	acaaaatacc	ttagactggg	taaaatgtat	aaataataga	221100
agtgtattgc	ttatagttct	agaagctggg	aagtccaaga	tcaaggtatc	agcacattct	221160
ggtgaaagct	gctctgcttc	atggctgggt	ctctcactgt	cctcacatgg	cataagaggg	221220
gcacagagcc	ctcaaccgtc	tctccagtgg	ccccactctc	tagtactgtt	ggattgggga	221280
tttagacttc	actaattttg	gggggacaca	aacatttgaga	ccacagcagc	atgactgagg	221340
ataagcaaga	ggccagtgtg	gttgagcaga	gtgatcagtg	aaggagagtt	aggacatgag	221400
taaagaggct	agcagacacc	agatctcata	tggttttgta	ggccatagtg	aggactttgt	221460
ttaagctgag	aataatagat	aacctcagga	aagtttcagg	caagagggtg	acatgatctg	221520
atctgggttt	taaaaggatc	actgaagtgg	ggagactgtc	tacagatggt	ctgaatagga	221580
gtcctagtct	attacaatct	ccttgaggtt	taggggtggt	actggaggtg	ttcaagagta	221640
gttggattac	ttgtggattt	caaaagttag	gccaacacga	tatgtgcatt	ggctgtgagg	221700
tagaagagga	gtcaaaatga	actccagggt	ttattgactg	agcaattgtg	ccatttcctg	221760
agatgggtca	gatttgggaa	ggaaagaatt	taaaggggat	aagataatcc	cattaggagt	221820
gtgttaagtg	tgagattcct	atttagacttt	cgagtggaga	tgatttaata	ggaagataga	221880
cttgcaacac	tggagctcag	cggagagggg	caccctggag	atagccggtt	gggaattagg	221940
aatgtgtgga	tcatgttata	ggatggggct	atttagggac	ttaaaacagc	tctgagaaga	222000
aaaaatgggtg	ccttgatctt	ggacttccctg	gtttatagaa	ctgtgagcaa	tatatatata	222060
ttttttttcaa	gacagagtct	tgctccgtca	tccaggctgg	agtgcagtcg	caccatctcg	222120
gctcactgca	acctccactt	cctggttcaa	gcaattctgg	tgccctaagcc	tcccaagtgg	222180
ttgggactat	aggtgtatga	caccatgccc	gactaatttt	tgtatttttt	tgtagagaca	222240

FIG. 6E3


```

gggtttttgcc atgtttggcca ggctgggtctc aaactcctga cctcaagtga tctgcctgcc 222300
ttggcctccc aaagtgtctg gattataggg gtgagccacc atgcccagac taaatttcta 222360
acatttataa attatccagt ctaagatatt ttgtgatagc agcccaagca gaccaaggca 222420
aaggccaagc acacttgctc ctccctgactt ttgtctcttc tggaatgttc ttccttttagt 222480
cacatggttg cctgcctagc ttcattcaat aggagtgtgg atgattatct gtcagatgct gctgaaaaag 222540
gaatgctttt ctttttttta aaaggaaggg caatagggaa gttagctctg ctaactccac 222600
agtaatagag taattggcca ctggctctgg caatagggaa gttagctctg ctaactccac 222660
atgaacagtt tcacatgaac aagtgtgagt gggctcaaga gaagggatgg tgagaaagtg 222720
gagctatgga ctcaactctt gatgggagag gctgacacat cagtgctctaa gaggagcgg 222780
gtttttgtta ctgttctgaa gatgggagag gctgacacat cagtgctctaa gaggagcgg 222840
ggggcgcttg cgggggcaaa ctctccagg tatttaactg attaatagga aagacaaagt 222900
tgtgacccta agagctagaa aaattatttt ataatagga aagacaaagt tcttctgatt 222960
agatgctaag agatttgctg ataaaagaat gagaacgggt ccttctgatt attttcttgg 223020
ggaaataaat agatcatcag ctgaggggtg gaggggagaa ggagttgaac atggaggaag 223080
acaggtgtga aatattgggt tcagaatgga gagcgaattg aatagggaca tgagtgggc 223140
ttgctaagct gtgoggagag cccgtgggaa gtttatgggt atcaatttaa tggcgaccag 223200
ccaagatggg ggtttatttt tctccagttg tatttaactg ctcaggtgca ggcagagag 223260
actaagtgtg aagttaattt cagccaactg agaggaattg tcaggcagat gggacaagga 223320
gatagaggag aaaaggaata aggttctctg caagggtaat gattgtaggg atggataagt 223380
aaggaacaca ggaagtgggt gtctgctgag tgggtggcaga gctcagtggt tcagagcaag 223440
gttcaaagaa tggcagagag gcacttggtg aggaagtaag ctggctagaa agtagtgtgc 223500
ttgaaattaa gcttctggag atagcaaggt tacaggtgat gacaaagtct gagtatgaca 223560
aggaactgca agggccagag ttggcaagaa ttcagtaaaa atgaggagaa agaggacca 223620
agaggctggg atagcacatg gattgtctct gtgtgaggca aagtcactca aatggcagca 223680
gtggccctag cagaaagaaa tatacagtga gccggagcaa aaatcctcaa ggacaggcag 223740
aacgccatga aaacggcaga tgacagccaa aggagcaggg gcaggggctc agtccaaagt 223800
gtttcagagt cactggaggg ttgagtgagg aggggagggg gtggctgaaa tggcaacaag 223860
gaagaacctc tctcatctcc agggccaaaa gtatgtggaa tgcgggagat aagacagcca 223920
ccactggcca gggctgtaaa gggacattca cgaatatttc aggttcatt tagcacgaca 223980
gcaggggaagg gactgttggc agaaaaaac tggggcagtg ggattaaaga cagaccacac 224040
attccaaaag gcaccgtggg aggtcaggg ggcgaggtta ggtctaggct tcagtgtcct 224100
gggagactca gtcttcacag ggtgacagcg atcaagagtg cagcttaggc tgggtgcagt 224160
ggctcatgcc tgtagtccca gcactttggg aggccagagc gggaggattg cttgaagcca 224220
ggagtttgag accagtctga ccaacatggc ctaactaaa ctctactaaa aatacaaaaa 224280
tcaactgggc atggtggcgt gtgctgtag tcccagctac ttgagaggct gaggcaagag 224340
aatcacttga acctgggaag cagaggttgc agtgagctga gatcgtgcca ctgcactcca 224400
acctgggcaa cagagtgaga ccctgtctca caacaaaaaa gaaaagagta 224460
caacttatga aggggtctcc tggggagagg gtttttggga ttctcctgcc tctcaaagt 224520
ctgggattat gggcgtgagc caccacacc agccgagggg ggtcaggttc taattgtttg 224580
atctctcttg ggattggcct cctgggcagt ttaaaagaca aggcaaggaa tcttttggag 224640
aaagagactg ggggcaaggt gtgtctgaac agaagtggtg agaagctctg tgggctccct 224700
tcagacttcc agtcgttgaa ttgggatctc atttatatca gctctagggt taacgatatt 224760
aaatcttctc tgtcatttgg caattttggg ttatgcttga tcatcatttt taatgtttcg 224820
acatgtagaa gtttaacatt attttaccat cttttctctc tggcatcatg ttttagcaag 224880
attgtttcca ccaaagaat atatatatct tctaataaaa ctacgtttct tttttttttt 224940
tcctttgctt tctcttttgg tatatgaatc tttgattatt tgtaattgtt ttttagtgtt 225000
aacactgaag tttctatttt gtactatttt tttcccaaaa cagtaaaact attgttcaaa 225060
tacttattga acaaccttca ctattcttta accatttaga atacgccatt cacatatctt 225120
tcatactaca ttttaataaca ttttttaatt aaaaaatatt ctactgattt gtttattttt 225180
agaccaggtt atgaaactgg ctaatttttt tatttttgtt aaataccgaa attcactgtg 225240
ttgccaaagg tggctctgaa ctctctgggt caagcaatct taattttgtt aaataccgaa attcactgtg 225300
gtgctgggat ttcaggtgtg agccgtctca cccggccaca cccggccaac acatattatt 225360
tgttattaca ttttaattccc acagtacatt gaaattatca gggaaaagt ttcagtgaag 225420
cattattgaa cgccacatta aaagtgtaaa ttacaaagat ttaatgccaa tttttcagaa 225480
gaaaaaagac caggaggaag gtctatgaag ttttagccag tctctcatcc acctaccatt 225540
tcacgatcat gcactgtgta agtcaggaaa agagtaagaa aagtgaagaa tacaattgat 225600
tagagagttt tctctggatac tatagatgaa aagaacacaa aatggaaacag cctcttcaag 225660
cttagagtca acggctgtag tcccaaagac tgtagtcaag ggcggtaggg ccaaaagaca 225720
tgacttatgg cattggagga agaggatgct ttgggagttc atggtagaag aggcggaaaa 225780
aatctgggtg attaaagaaa gcatcccaaa gtgacattaa actaatgact aaattctgag 225840
ctgttttcag gggcaaagcc tgtttgggca cccctgccac acttaaagag tcacctaggt 225900
atggttctgt ggctctgaac aggcctgctc agtgaacata tttgtgactg tttctccggc 225960
ccttttagct gtattgagta aaatttaag agaccattgt tttggcctaa gctctcgccc 226020
taggcccata gaacagacca aacctgaatg gcttcacttg tcctaggtgc tgtgtactca 226080
aactgaactt tgaacaggt cggtttttca aaaaaagcaa aagattcaca gcaaccaatt 226140

```

FIG. 6F3

agaagaggcc	cgggtcaacct	gagccagcat	gatgaggctc	ttctgcttta	atcctacaag	226200
gaaagaaact	ttgaaatgac	caatctgctt	tcattctcttg	ttctgctttt	ctttgggtcta	226260
tttctgcctg	taaaacctat	ctcctctgct	cagctcattg	aagtaccttt	ctatattatag	226320
atgggatgct	gcccgaactca	tgtatcgcta	gtaaaagcca	attaaattat	tacactcgat	226380
ttgttggaa	tttgcctttt	tgacagcttt	tcaaaaacac	cagtaggttc	acatccctaa	226440
ttccccagcc	agtgttccct	caaggaacca	tggaagaagc	aaaggtggct	gaaaggcgcc	226500
tcaggatgct	tctaagcacg	gcacatccat	gaaaaggcac	ttactaatat	ttgcaggata	226560
gcaaagcact	gcagtgacga	taaatctagt	attggagaag	ttcaaaaata	tcagtagatt	226620
aacacagaag	ccagagctta	tagggagaaa	aggaacccta	tgaaataact	caaatccgaa	226680
aacgaacatg	catttccctgt	ttagtttagtg	caggtacgta	aaagcttggg	aaagtacctt	226740
tcttgccagc	tttctctttc	ttacaagcct	ttcactggg	ctgggagggt	gatattatct	226800
aaatatgctg	aggaggttca	agtatctcca	caactcacct	cagagtgaat	gctccccctg	226860
gccttaaggc	aatataaacc	agcctgtttt	agcaggatag	caaaatgttt	gcgggttgtaa	226920
actgggtgtcc	cattgggtgt	ggcgcttggt	gtgtaaagaa	tccctgtgct	tggtaattaa	226980
tagagaaatt	ctatattttt	aacttcagtt	gtatattggc	tcttatccat	ggcagatttt	227040
cacgtatgtg	ttcttttttt	atttattcag	agccggagtc	tcgctttgtc	gcccaggctg	227100
gagtgcagtg	gcgcgatctt	ggctcattgc	agcctctgcc	tcttgggctc	aagcaattct	227160
tctgcctcag	cctccctagt	agctgggact	acaggtgcat	gccaccacgc	ccggctaatt	227220
ttttgtattt	tagtagagat	ggggtttcac	cgtgttgctc	aggctgggtc	tgaatttctg	227280
agctcaggca	atccgcccgc	ctcggcctcc	caaaagtgtg	ggattatagg	tgtgagccat	227340
catgctcggc	cctatgtgat	atttattaca	atgaattcca	atgatcagac	ctatactcaa	227400
gtataagtga	atatatcatt	caatgaagta	taaatgatca	ttatgttcat	attcacacat	227460
acaataatgt	actcaagttt	attgctaagg	taattcagaa	tctccttatt	ttgaagtgtg	227520
cattttgatat	acctgttttg	gaataactag	tttcttatct	ttgacagaaa	ataattttgt	227580
tgtttttgtt	ttactaaaaa	agcatgggtg	aaaatggctc	catttctaag	agaggtaact	227640
aaaatatcgc	aatttgctgg	gtgtcattaa	agtaactcac	aagggaaaaa	atgcaaatgt	227700
gtatctgctg	atggagtaaa	tctccgcaga	agtgatgacc	ctgaaaggat	caatatatta	227760
aagcccctcc	cagctgggtca	ttccagattg	caacaataaa	gcattaagtg	ttaaaacctc	227820
aaggcagctt	tttttttttt	tttttgtctc	aagtccttta	ttattaattt	tatagacctc	227880
cttaattact	aagccaaaaa	aaatcaaact	tgtttctctt	tgtgacttgt	caatagtatt	227940
aaactattct	ggttttttat	ttttgtgtta	ccttaaagtc	tccagtttag	taatttttct	228000
gtacctaaac	acttcggatt	tgacatgctt	tgtggccttt	atcagtagtt	agaatgtaaa	228060
tccaataaat	aaagtaaaag	ccaggtcttc	aaaacctggg	ggccaagaac	tctgttttag	228120
agggcctgtg	actctcttgg	acactggaca	aaatctcatc	tctaaatatg	gatattttag	228180
ggagagggtc	tttaggctgt	catttggatt	ttcacagggc	tccatgtatc	cataaggtag	228240
tctcttgga	agtttgactt	caataaatga	agtttaactt	aaacctaaaa	tgaaatttta	228300
ctgaaaaaca	aaatccaatg	aaagatgctt	tottatgcaa	aaacaaaaca	acaaaaaaaa	228360
aacaaaaaaa	ccccaaaaaa	cccaaagcca	agatttgttt	ctgaaattag	gttctaggtt	228420
ccagagcaac	tccatggtag	ggaatcagcc	acagttaaag	taagctaaga	gtttggacaa	228480
tttgtaatat	ttattcctag	gtttctttta	gaccttttca	gattttgaat	tcctattagt	228540
agcatcagcc	aggttctaaa	tgtaggcatc	accatagaca	cttccccact	gctgcagtc	228600
c'aacacttg	cccaattttc	ccttgaattg	cacccatgct	gccttctcca	ggcctatttg	228660
aacccagaac	ctcgttgtgc	ctcgtttgaa	atataatttc	ctcctaacta	gtctctgatc	228720
tactattttc	cctacattgc	tgccacacta	atcacctaaa	atagatttca	ttctaccttg	228780
aaacagaaat	ctctaataag	ttactccctt	cccttacggg	gtaaagttag	ccacacctga	228840
ggatttcaag	gaccttccag	gagctaagaa	catttccctt	gcaccttctt	gaagtacact	228900
tgtcctatgt	actggttatg	ttcatttctt	accctcgctc	tcgttttgtc	tggaaatttt	228960
cttggcctta	aatgcctctc	acctgcctgc	ccacatctct	cagggttggt	tcaaatcctc	229020
aatgaaggct	cacagcccca	gtctatgttg	gccacttact	tcgtggcctg	ggaacatttt	229080
tctttggctg	acttgctgac	actccatcag	atgcattttt	atctgggtgt	ccatctgtga	229140
accataccct	gagaaggcag	agagtgcctc	tgcatgtaac	atgtgctagg	ggacaggctc	229200
gtgctagagg	ggcaagcact	gggaatgaag	aactgggtcc	tactcccaag	gagttcatat	229260
ctcagtgag	gtgacaagca	actcactggt	tccggggggt	gtggtgactg	ctgggagaag	229320
gggtgtctat	attagatcga	agcagcatca	ggggagggtt	cctgagaagg	tgatgcctca	229380
gcggtatgtc	cccagctaag	tgggggtggag	gtggagaagg	gcagagcagg	gagaggatct	229440
aggtggggcg	tgtaaagtctg	catgggtaac	tcagggaacc	cttggtaact	gcatgtaact	229500
gtgtggaagc	ttcatgaagg	aacatggtag	gagactaggg	tatggactat	agaagccctt	229560
ttgctaagct	caagaatttg	aggccgggag	cgggtggctc	cgctgaaat	cccagcactt	229620
tgggaggcca	aggcgggcgg	atcacgaggt	caggagatcg	agaccatcct	ggctaacatg	229680
gtgaaacccc	gtctctacta	aaaaaaaaag	acaaaaaatt	agcggggcgt	ggtggcgggc	229740
gcccgtagtc	ccagctactc	agggagctga	ggcaggagaa	tggcatgaac	ccgggaggcg	229800
gagcttgag	tgggcggaga	ctgtgccact	gcactccagc	ctgggcaaca	gtgcaagact	229860
ccatctgaaa	acaacaacaa	caacaaaaaa	tttgaagtgt	atcttgaaag	aaatcccttg	229920
gagcctaaaa	atgatcattg	ataacagaaa	atgatctctg	ctctcgccta	gggtaatata	229980
ttcagcttca	aagtgggaag	gcatgttttc	caagggcatg	ttttctaagt	ccctgtaatt	230040

FIG. 6G3

gtagtgatag	caaatatatg	ccttgcacat	tgaaatgtaa	gactagggtt	gaacagtata	230100
taaattatct	tatgatctaa	tttccctcca	ttttgtggtt	tctactataa	gctacccaga	230160
agtgtagaca	ggacgttttg	aatttgatgg	gcacgcgaaa	gattccctacc	taagaacatt	230220
tttttttttt	tttttttttt	tgagaaggag	ccttgcctcg	tcacccaggc	tggagtgcag	230280
tggcacgac	tcagcttact	gcaacctcca	cctctcaggt	tcaagtgatt	ctcctgcctc	230340
agcctcctga	gtagctggga	ctacaggtgt	gcaccatcat	gcctagttaa	tttttatatt	230400
tttaataaag	gcaggatttc	actatgttag	ccaggctggg	cttgaactcc	tgaccccatg	230460
atctgcccac	cttggcctcc	caaagtgtcg	ggattacagg	tgtgagccac	tgcgcccggc	230520
ctctaagaaa	attttttgaga	gctacttggt	ctgttgccctg	gaattccacc	gtaagtacga	230580
cgttgtgtct	ccttctccag	ggctactaac	taacaacacg	agggatttgt	gttatcgaca	230640
attatttgat	tgataactat	cagcaaacat	ttgccaaggc	attcctttta	agatagccta	230700
gtgactctat	taactactcc	ttcttccagg	cttctaagtt	ctgttgagg	taagtagatc	230760
ccagagataa	agcacctacc	ataggacctg	aatcttggtg	gaaataaatt	atatcatcat	230820
gttatcatat	tatcatgtgt	ttttctatct	ttaaagtctt	atgtgaatat	tctgcttgaa	230880
aaatatgtgt	cctctgttag	accagagttg	aaaatatggt	attcaagaac	ttgtaacagg	230940
aaacccgcaca	atcttctgctg	gagtttaatt	tcagggttaa	ttctgtcagc	aatctaagg	231000
aaacattaac	atttttccct	agattcaagt	ccgttgtcca	aaagctgtaa	cagaacttaa	231060
ctgaataaat	agtttcttaa	gatggtaagc	ttccatattg	ttataatgac	tcctctacac	231120
gttttcatct	ggaaggctgc	tcattgctttt	ggaagcaaa	aagacaatct	taaataacta	231180
catttgtctt	ttgggtggtg	cagatttttt	tgagaaacac	caatggaatt	tataaattca	231240
ccagtcaatg	ggcaattgag	ttgctgtttt	gctattacca	ctgcccgttt	tgagcatgtt	231300
tgggaagggtg	tcttgaagca	cacgtgcaag	tttcccttgg	ataagtagta	ggaatagaat	231360
tgccaaacca	tggcttccag	tgcagacaca	gtctctccct	tgggcccagc	cactaggcac	231420
cacacattaa	gaggatattg	tctgtccatg	tcctagaaac	gttgtagcat	catgctccta	231480
ttcgattaaa	aatctcatta	ttaaaatgaa	ccatcgggta	aatgttgtct	cgggaaaaga	231540
agcactgacc	gtccctgggt	gggctcgaac	caccaacctt	tcgggttaaca	gccgaacgcg	231600
ctaaccgatt	gcgccacaga	gaccagttta	ctcaggccgc	gctgcggtgt	gtacagattt	231660
ccgcggcgcc	ggcagccgct	ctagccaccc	tggcgctcgc	cacccaggc	gttgccaccc	231720
caggcacggg	ctgagaagtc	gcggggcgcg	ccgaggaggc	agcgggaagc	gccgaggtgc	231780
ccagcggccg	ccgcgggggg	agaggctgtg	ccccggcgcg	cgggaggggg	cgggcgaggc	231840
cgcgtgactc	cgggcttctc	tggggacgaa	gcgcgcccct	cgtggcggca	gcggccagtg	231900
gtcccgactc	ggcccgagct	cggggtagga	aagatcctct	cagcaatggc	tgcgcgccat	231960
gcgtgctctg	cggcggggac	cgtgcggggc	ggcgcgccca	ccagtaacca	gggacccagg	232020
ggagaacctg	ccaaggggaa	taggtcgcac	ggagagaata	cgacacgctt	ggagggaaga	232080
accacgtgct	gtacagggtt	aaaggatgga	gagtcacgtg	cgcttaggtc	ccaaacttaa	232140
gggaacctaac	cctttttctg	ggttgccgct	attgcccctt	ctccttagac	agtttttcat	232200
ctcatcacct	ctcaccctgt	aaaatgcaac	gaacatagat	aggctgtgta	tcaatgtaga	232260
ctgtatgtat	atctgtgctt	cgtacataaa	agaatatga	tttttgccac	cttctaagaa	232320
ccaatttgca	ccccattttg	aggcatatgg	cctctgttga	gattgcatag	tttaggggac	232380
atcaaaaaag	ccttatagag	ggactggcaa	ttaaagatag	ctttcagttt	gaaatggcca	232440
ttgaaggctt	ctccctttcc	ctgacttctg	aatttttttt	tttttttttt	tttttttttt	232500
ttgagatgga	gtcttgccct	gttgctggag	tgcaatggcg	cgatctcggc	tcactgcaac	232560
ctccgcctcc	cgggttcaag	cgatttctgc	ctcagcctcc	cgagtagctg	ggaatacagg	232620
cgctgcccac	cacgcccagc	taacttttgc	atttttagta	gaggcggggg	ttcgccatgc	232680
tggccaggct	ggtctggtac	tcctgacctc	gtgatccgcc	cgcctccgcc	tcccaaagtg	232740
ctgggatgac	attacaggcg	tgagccaccg	tgcccggcca	attttttttag	gcgcactgtt	232800
cagtggcact	aagtacattc	acattgttat	gcaactatca	ccgccatcca	tttcocagaac	232860
cttttcatct	tccgaaacag	aagctcccta	cccattacac	ggtaactcac	gattccccct	232920
ctctagtccg	aacaatcacc	atttctactt	ctgtcccttt	gaatttgact	actcttagag	232980
acctcatgta	aatggagtca	tacgggtgtt	gcttgtggct	ggcttatttc	acttaccata	233040
tgtcttcaag	gtccatccac	gttgtagcct	gtgtcaggat	ttccttccctg	gataaggctg	233100
aataagctgc	actgtatgca	ggtatcgcat	tttgcttttt	cattcatctc	tccgtgaaca	233160
ttagggttgc	ttccacctgc	agctatgaac	atgggtctac	aaataactga	ttccctgctt	233220
tcaattcttt	tgggaatata	cccagagatg	gagtagctgg	atcacatggt	ttgctattgg	233280
ctgtaccatt	ttacattcgc	accaacagtg	tacaagagtc	cctatttctc	ctcatctatt	233340
tttttttttaa	ataatgggca	tcctaattgg	tatgaagtat	catctcattg	tggttttgct	233400
ctgcatttct	ctaacgatta	gtgggtgttg	gcattctttt	cagacaccac	caatctgaat	233460
tctatggccc	ttcgtttact	cacttccctc	cagcaagagc	catttctgct	tcagcaagga	233520
ggaagctgcg	actgatagag	ggaaagggcc	caggggggct	gcagagtggg	gcctgtgcca	233580
tgcaaggaga	ggagaagaag	gtggatcttt	gagtaggact	atctggagat	cctgctttca	233640
caaggctcct	gcttgctgct	tgggcagctt	ttggagctag	ttatctttat	tttagccctt	233700
gagggatatt	taggcattgt	gtgcttgtga	gcagccaatc	catgaagaag	gaactgatgg	233760
tctccacctt	ggaaatattg	gaagagataa	tgccgtccaa	attgcagttt	tagaagttaa	233820
cttaaaatta	tgctattttt	atggaatttt	gggtgcattt	ccattttctt	cttaagaatt	233880
gctggaattt	cttaagtgtt	taggtgatga	tctctttttg	tgattccctt	tttaaaaaac	233940

FIG. 6H3

aacaacaaaa	tcttttcaaat	acataagaaa	taggccggggc	acggtggcgt	aatcccacca	234000
ctttggggagg	ccgaggagg	cggatcatga	ggtcaggaga	tcaagaccat	cccggctaac	234060
acggtgaaac	cccgtctcta	ctaaaaaata	caaaaaatta	gcccggcggtg	gtggcgggcg	234120
cctgtagtc	cagctactcg	ggaggctgag	gcaggagaat	ggcatgaacc	cgggaggcga	234180
agcttgtagt	gagcctagat	cgcaccactg	tacttttagcc	tgggogatgg	agcaagactg	234240
tctcaaaaaa	aaaaaaaaaga	aaaaaaaaaga	aagaaataga	cctttatttt	tctgtaactc	234300
cacaaaattt	ctattttgat	tccctattat	tttgctattg	tcaacacagt	ctcagtcaat	234360
tcaagatcct	gtttgtgct	ttccctggag	tcatttccaa	gtgctaaggc	tttgggtccat	234420
gagtcgcatg	tgacacactca	tggtctgtaga	gggagttttg	ctcccgggtga	aggtccttgggt	234480
ggctcttcta	taccttgatt	gagggaaagg	aatcttatgt	gaagttagct	ttgttgtatc	234540
agatattcca	taaagccatt	tctgggacag	tcccctctgt	ttatcggacc	acaagcttct	234600
ctgtcctcat	caagcccacc	tttatacttc	atttctccag	acttcatgtc	cagactgtgg	234660
gatgaacaag	tggttataag	gttttagagg	ctcctgtagg	actagatgga	aggcaaaaaa	234720
aggaaataac	ctttaagcat	gctctcgatt	ccttaaatcc	catctgaaag	tcttaaggat	234780
gtcttctcag	tcatacttat	ttgacaatat	tacctaattt	tctccattag	cccaagctca	234840
ggggtctttc	ttcttccata	ttcacatggg	tgcaatgggt	ttctgaaagg	aaaacagcat	234900
tactagggca	gtaacattta	attaatcaca	ggtacttatc	aaactacaaa	acaggcattc	234960
caggaactgg	gtgtttctgt	ttgtaaaatt	acactctcgt	gtacatgctc	ccactaaaaa	235020
gtaagttcgc	tgaggatgga	ggttttgggtc	tctttgctct	gtgctgtaac	cccaacactg	235080
cagcagggcc	tggcacatag	caggcatgca	gggactatgc	actgaatcaa	tgaggaaatg	235140
aaaaccagga	aactggacga	aactggacaa	ataaaaatgc	gatagaaaat	ctaaaattcct	235200
aatacataag	gagcacttat	caattgatat	ttacaaaatc	tttttacaat	tcaattaaag	235260
acaacataaa	acaataaga	atggggacag	gaacagaaaa	ttcccccaaa	gaaaaaaata	235320
tatatacatg	gtacagccat	tgtggaaagc	agtatggagt	tctcaaaaat	attaaaatag	235380
aactatcata	taatccagca	atccccatccc	tgggtatata	tctaaaggaa	atgaaatcag	235440
taccccaaag	aggtgtctgc	actcccattgt	ttattgcagc	attagttaca	acagccaaga	235500
tatgggaatca	acccatcagc	agatgaaagg	ataaaaggaca	tgtgatacat	atacacaatg	235560
gagtagtatt	cagccttaaa	aaagaagaaa	atcctgtcat	ttgcaacaac	atggatgagc	235620
ctagagaaca	tactaaatga	aataagccag	gcatagaaag	acaaatgctg	catagtctca	235680
cttaggtgtg	gaatctaaaa	aagtcaaat	aaaaaaaaaat	gtcaagcaga	gaatagaatg	235740
gtagttgcca	gggactctgg	gaagtagcag	gggtgggggt	ggaggggagg	ggatgggcag	235800
aaagtgtgca	aaaggtacaa	agtttcagg	agacaggtgt	aagttctggg	gatctattgt	235860
acagcgtggt	gactgtagt	aatactgtat	tgtgtactta	aaaattgctc	accaaaaatg	235920
ttctcaccaa	aaaaatgatg	tttggtatag	ttaaacagtt	tgattttaatc	attttgacgt	235980
gtgtgtgtgt	gtgtgtgtgt	gtgtgtgtgt	gtatacatca	aaacatcaca	ttatatacca	236040
tatacaatta	atatatacaa	tttttgtcaa	agaaaaaatg	cacatgacca	atatgataaa	236100
agtttagtct	cactagtaat	aaaaatcaaa	attaaatgaa	ataaaaaattt	ctttcccaaa	236160
atcgcaaaa	agaaagaaa	gtaatactaa	aacacagtc	cgggtgtagt	agagggctgc	236220
tctcacacag	gactgatgag	aataaaattg	gagagcagtg	tggtaatata	catattaaac	236280
aatgtatata	ccctctcatt	ttagaaattc	tatattagaa	atccatccta	agaaaaatac	236340
cagggatgtg	atcaaaattt	tgaatgcagc	agcacagtat	tatttataat	agttataaat	236400
aagaaacaac	ctgaatgtcc	agcaacaggc	aaaaatgata	aataaattgt	ggcatattta	236460
agctggtggc	tcatgcctgt	aatcccagca	ctttgggagg	ctgaggcagg	aggatctctt	236520
gagggcagga	gtttgaaacc	tgtctgggca	acataacogag	accagctctc	tacaacatat	236580
tttttaaaat	taggtggggc	atggtaactc	atgcctgtaa	tcccagcact	ttgggaggct	236640
gaggtgagca	gatcacctga	ggtgaggagt	ttgaaactag	cctggccaac	atgggtgtaac	236700
accatctcta	caaaaaatac	aaaaattagc	caggggtggg	tgcgttctctg	tagtcccagc	236760
tactcggcag	actgaggtag	gagaatcact	tgaaccggg	attcggagggt	tgcattgagc	236820
tgatatcatg	ccactgcact	ccagcctggg	tgagaccctg	tctcaaaaaa	aaaaaaaaaa	236880
gaaaaagaaa	aaattagctg	ggcgtggtgc	tgtacgcctg	tagtcccagc	tattccggaa	236940
gctgaagcgg	ggggattgct	tgagcccagg	aatttaaggc	tgagtgagc	tatgattgtg	237000
ccactccgct	ccagcctgag	tgagaaagca	agactctgtc	tcttaaaaaa	aaaaaagtga	237060
tatattttta	aaatagagta	tattacttat	atagacatca	aaaacaatat	tttcaaggga	237120
tatttaaaaa	cataggatca	tgacaaaatg	taaagttcaa	aggtaagatg	gagaatggag	237180
aactgtgggg	aactgtataa	tctgacaatt	cgtagtgtga	tacatctttc	tgtgtgctgg	237240
tgctgttaga	acactttgta	cgcatacctc	catttaagtt	cagcatccct	aggtggcaga	237300
tactattatt	atattccagt	tttgtttcac	gttgatatag	cgggtgtgagc	cccaatatgg	237360
gatgtgtgtg	tgcacatgtg	cagtatttgg	aaagttctat	gaaatattat	tagtgggttat	237420
ctctgggagg	tgattttttat	tcctttttcca	gtatgttctc	aagcatttgc	tgcaagcagt	237480
cttttgcggg	gccagggttg	agaggcagca	gcagtttccc	taaattacag	atagagggag	237540
gtagggtggt	atgcttggcc	agatctctgt	ctaggggtag	aggagtgcct	gtgtgtgggt	237600
agggacaccg	gcggggggct	ttgccaaaaca	cagtggaact	gtcacgctgg	tctctctctc	237660
caactctttc	actcacctga	gaaaagggtg	tctatggacc	atgcacactt	ctgtggggaa	237720
ttttacaaga	tgtgaatcat	cagtgatgaa	gatgctttca	tttaaaaaaga	attggagtac	237780
ctgagattag	agataaacttc	taccttttta	aaatatTTTT	aaaaatttct	ttgcactgat	237840

FIG. 6I3

ttttttttctt	cgtttttatg	agttgttttc	atthgggtgg	gataactcaa	tctacaggag	237900
aatattaaga	cttttttaaat	tttaaaaaaat	atacttttcaa	atactttaata	catttttgtgt	237960
taaatgacag	ccagcagata	ttgactgaat	tgggctagat	gcttcaggga	tctcccttcc	238020
athtaagact	ctccgagagg	ccatttctga	ctgcagggtca	ctgtattatt	tttaattttta	238080
aaatthtttac	ttactttatt	tattttaattt	tatttttttga	gacagagtct	cactctgtcg	238140
cccagggttg	agtgcagtg	cacaatctca	gctcactgca	acctccacct	cccgggtcca	238200
agcgattctc	ctgcctcagc	ctcctgacta	gctgggggtta	cagggtgcagg	ccaccacacc	238260
cogttaatttt	ttgtatatatt	agtggaggtca	gggattcgcc	atgttggcca	ggctagtctc	238320
aaactcctga	cctcaagcga	tccttccacc	tcagcctccc	aaaatgctgg	gattacaggc	238380
ctgagccacc	ccactcggcc	tacttttatta	atccacttgc	agaaacagga	tatacacaaa	238440
aacgttttcaa	ggctgttaagt	gccactgcat	ggcaccaatg	gtaaacgttt	tacaaatttg	238500
agtcaggaac	aatcattagt	gtcactagca	acaaaaatca	aaattaaatg	aaataaaaaa	238560
tttctttccc	caaattggcaa	aggagaaaga	aaggtaatac	taacacgcag	tcagggtgta	238620
gtgagagggc	cgctctcaca	caggactggg	aagtacagag	ccatggagta	agcagggtctt	238680
gagctgacac	tggagaggat	cctttttttt	ttttattttt	atthtttttag	agtcagggtc	238740
ttgctttttt	accaggctg	gagtacagt	gtgccatcat	agctcactgc	agcttcaaag	238800
tctgtgggctc	aagagatcct	cctgcctcag	catccccagt	agcaggggacc	acaagtgaga	238860
ggatccttta	gtgttgtcaa	ggagaaggaa	cagaggtgtg	gatgggtggg	cacagacaca	238920
ggagcacagc	tgaagcagag	gattacaaag	gggtggagcct	gatgtaaaga	aacctaatag	238980
gtgacagagc	atggagggtc	ttgaatacca	ggctgggaaac	tgcattagga	acgggtgctca	239040
taattgcaga	aaatthttaca	tggcctagat	agtcatacaa	ggatgatgta	caaacaacta	239100
tggcatattt	atacaattgtg	ccgacaggat	gcactgaaca	ttttgaacaa	caaagagact	239160
tgataatggc	gaggthtttga	ggagggtgaat	caggatgcaa	aaaaagcaaa	caactaataa	239220
agtttgattga	tgacaaacac	tatcaaaagg	cagccaggag	aaaagctact	ggttacctcc	239280
agggagctgg	tgagggaggc	tgggtgggag	gatctaccct	tctgaattct	gagggcacct	239340
ccagtgtggc	cctcagaaag	caggagcttc	caggctagaa	tcagatcccc	acatccctgt	239400
taattccagg	gattccacac	cgagtcagat	ttatgattha	ctatagggtt	ttaaaaacca	239460
aattgcacgg	atgctagcct	atcacagctt	atctcagaca	ttgtccacta	aggtatcacg	239520
agtgctgcct	gttctctttg	taccctaato	aggaaacccc	atcagatctg	ctccttccta	239580
tggggtagtg	agtaaacacga	aggcttacca	tctcacacag	ataactgggtc	ataggtccag	239640
cagaagttta	aaacagaaaa	tgaggaaagc	catgtgatta	actgctgcca	gactgtttgt	239700
gttacaaaca	gcagttcctt	aggcattgco	tgggacatgc	aataattttct	gttacacaat	239760
ctgttggtag	taaaatgctg	cacgatgaaa	gctatctgat	ttggattcat	tattagggtga	239820
gccatctcgt	ctgcaatttg	gttccaccat	tttcatttaa	caaatgtaaa	aaagthttatt	239880
aagctcttac	aaagttatgc	tgggcaaata	tgcaaaagtc	cagatcacct	accgcaggaa	239940
ctaactctagc	ctcctctctg	ggcaccctgt	tgtttggggc	tgggcagttc	tttctgtgt	240000
agaacctatct	agggctgaat	aggtcattct	gacacctggg	cacctctgcc	tgctcgtaaa	240060
tgggacaatc	agaaagggcc	cttatgtttc	caaacctttct	ttaaagtagc	tgthctgaaa	240120
acatggtcca	gggacccctg	attgtccctg	agacctttga	ggggatcttc	aaggthaaaa	240180
ttaatgtcat	aataatacta	atatgttato	tgtctttttt	cactctcact	ttctcacacg	240240
tgaacagtg	catttttccag	gtgacagagt	gtgtgataat	gaacctaaact	gaatgcagaa	240300
gcaaacatga	gaacctagtt	ttttcaatca	aaccagacgt	gaaagagatt	tgcaaaaaatg	240360
aaaaaacaat	gctatcctcc	tcacaatatt	tttgtttttg	aaaataaaagt	tattttttcct	240420
agaaaatgtt	ttgagthttt	cagtcatagg	tttatttatta	taattaaaaa	atgaaatata	240480
catacacaga	catatttttt	aaagthttct	cttttttttt	cttttttttt	tttttttttt	240540
ttgagaogga	gtctcgtctc	gtcgcccagg	ttggagtgca	gtgggtgcgat	ctcagctcac	240600
tgcaagctcc	gcctccctgg	ttcgcccat	tctcctgcct	cagcctcccc	agtagctggg	240660
actacaggca	cccgccaccg	cgcccggtta	atthttttgt	tttttagtag	agacgggtgt	240720
tcaccatgtt	agccaggatg	gtctcgatct	cctgacctcg	tgatctgccc	acctcgccct	240780
cccaaagtgc	tgggattaca	ggcgtgaacc	accagccccg	gtctcagttt	taattttctaa	240840
tacagtaagt	atgatcag	gtgcccaca	ttagtaaaag	ctcttgggg	cctcagtact	240900
tcttttttaag	agthgtcaag	gagtcctgtg	accaaaaata	ggagagccac	tgccctagaa	240960
ggacagcccc	agcccggttc	aggaacaact	gggacagaac	ctactgctcc	tagtggtattg	241020
taatatgata	ggattttaacc	ttcaaggtht	caactccttg	caagagthcca	tgagggggcca	241080
tggthttgtcc	tgagcattgc	ttactgttaa	caggagcaag	ttccttaggc	tgggtgagcca	241140
agccagcctc	acgctggcca	tggacatctt	agthgggtcg	ttgttctagt	gtgggttttct	241200
atthttatgg	aaatgtcatc	gtctctaagg	ctcttctcat	ttgggggaaat	cacaagthtct	241260
cagaatgttt	gtctctcttg	gttggggcct	ctataattaa	attataaaac	agaggtaatg	241320
gttaagtaat	gcaagatttg	acagaaacca	cagaggatth	agggthtaat	ttgagtgagg	241380
caaagggggg	atgaagatga	gcggtcctgg	agacaagaaa	aagattggat	gaagctgggc	241440
acggthggct	acgcctgtaa	tcccagthact	ttgggaggcc	aaggtgggca	gatcacttga	241500
ggccaggagt	ttgagccag	cctggctcac	ataatgcaac	ccgctctcta	ctaaaaatc	241560
aaaaatttag	caggcgtgtt	ggtgtgtgct	tgtatgcaca	gctacttggg	aggtctaggc	241620
atgagaatcg	cttgaatccg	ggaggcagag	gttgcatgta	gcagagatca	tgccactgca	241680
ctccagccta	ggcaacaggg	tgagactctg	tcttcttttt	ttttgagacg	gagthctgtcg	241740

FIG. 6J3

cccaggctgg	agtgcagtgg	catgatctct	gctcactgca	agctccgcct	cccagcttca	241800
agcgagtctc	ctgcctcagc	ctcccagagta	gctgggatta	caggcatgtg	ccaccacacc	241860
cagctaattt	ttatatTTTT	agtagagacg	gggtttcacc	atgttggtca	ggctgggtctc	241920
aaactcctga	cctcgtgatc	tgccccgcgc	ggcctcccaa	agtgtcggga	ttacagggtgt	241980
gagccaccat	acctggctga	gactctgtct	ttaaaaaaaa	aagagagaga	gggagagaaa	242040
gattggatga	aacaacagag	tggggaggac	ctgtgagctt	ggtagcttgg	tgaaggcagg	242100
gctttatttg	gggccttaga	ggggatccaa	taaaggttcc	cagtcatggg	agtgcactaa	242160
agaaaatagc	attttaacat	ctttcattttc	ataatagaca	gtcacagttt	acaagaccct	242220
ttccatacat	tccttatgac	atccatacta	cagcccagag	gcaagttgtg	cactctctcc	242280
tctcacaagt	acaaaaactc	agcctctaga	ggccagcgac	ctgctcaggg	tgatgtgcaa	242340
ttcagggatg	acagagtcga	ggctcccagc	ccagtgggta	tccttcacag	gcacgttgcc	242400
tgtcagtggtg	cagtataaaa	ctttgtacaa	gaaatcaagt	tgcattagtc	agtcggattc	242460
cccaaagtgt	cacattgtag	atgggtgatg	ctgtgggcag	agcaagggct	gctgtttctt	242520
gggcaaaaca	atcagtcctc	ctcccccca	aaataaatga	atgccaatgg	tgtgacttta	242580
ttttattttat	ttttattttta	ttattattttg	tgagacagag	tctcactctt	tcacccaggc	242640
tggagtgcaa	tggcatgggtc	tcggctcact	gcaacctctg	cctcctgggt	tcaagcgatt	242700
ctcccgcttc	accctcccga	gtagctggga	ctacaagtgc	atgccactgc	accgggctaa	242760
tttttgtatt	ttttttaagt	agagacaggg	tttcactatg	ttggtcaggc	tggtcttgaa	242820
ctcctgacct	catgatccac	ctgcctcagc	ctcccaaagt	gctgggatta	caggcatgag	242880
ccaccgcgcc	cagcaatgtg	actttataat	tacagaatgt	aggactcagc	tcctcactatt	242940
gttatgactc	aatattctct	tagataaatgt	ttggggcact	agcttacagg	cagcattggc	243000
cgggtggttaa	tgttgtagct	ttgcaggcag	actgaccata	ttaaaattcg	atcacacct	243060
ttgctaagcc	tgtggactcg	ggcacgcttc	ttctctcgcg	ttagtctcct	cctctgtaaa	243120
acacggatga	tgctataaac	acacccaagt	cctagaattg	ttatatgagt	tagaaaagat	243180
aggcaaatat	aactctcaca	agacagcctg	gcctccagta	agtgccactg	agtgtttgct	243240
cttattgtac	agtggctcca	agtgtctctg	tcttggtatta	tttctgacca	gggtggctatg	243300
tctcctagta	acttaccaat	cctgttgagt	cttaataaagc	acgtctttga	tgcttacagt	243360
gcgactgaat	ttccaggcct	cattactgga	gacacaatca	tcctatatgc	ttttttccat	243420
ttgttttttaa	taaagtggta	catgtgtatg	gcaccagatc	aaacagtaca	gaacaagtta	243480
caatggaaga	gaatggcctc	ccagcttttc	tgaaatcctc	aactcagaga	caactttttt	243540
ttttctgacg	gtttctttat	acagcccttt	ttgtgggttac	cttcctaact	ctagaaaaac	243600
tattcttacc	tctgtttatt	tacttagaaa	cattagacgt	tacotttcaa	ctcctcagta	243660
tgaagcttta	gtttttcagca	ccccaggcca	ccacctctct	tccaggactt	actacttata	243720
ctggtggtag	tgggaatttt	aaaattcatc	agcattcttt	tgtgattctc	tgtgtgttcc	243780
agttttacag	caaccgcgtac	ttgttgcatg	agtacagtag	aactgggagg	ctcataactt	243840
agcctgcagg	actttttcact	taaagcctgg	ccctcagggt	gatgtcacc	acctcattgt	243900
gcctggctca	ggagtttagt	ccctcagttg	cctgggtgta	tagtttggtg	gttcagcacc	243960
tccaaatctc	acattgaaat	gtgatctcca	atgttggtg	tggggcctgg	tgggagggtg	244020
ctgggtcatc	agggtgggtcc	ctcttgaatg	gcttggtgcc	ttcccatcg	taacgagtga	244080
gttcttgctc	tggcagttca	cacaagagct	ggctttttta	aggagcctgg	caacttccgc	244140
tctttctctt	gctcttctct	ttcccttctc	ttgtcactaa	aagcttctctg	agccctcacc	244200
agaagcgggtg	cagatgctgg	tgccatgctt	ggaactcctg	tagaactgtg	agccaaataa	244260
actctttcct	ataaattacc	cagtttcagg	tattccttta	tacaatgcaa	aacagactca	244320
cacatctggt	aaaccccagt	tgtttgcttc	taggtaaagac	gggaggagtg	gggagctggt	244380
gagggtttcc	actgcattgt	ctattttcag	gcaaggtgtc	tcactgagt	aggcttcaga	244440
ttcagagctc	tgggtaaggt	gggcagggaag	aggggtgcag	gctgcccata	ggaggagag	244500
aagaaggctg	aatccttcag	tgacaacctg	tgaaccagag	tcttagctct	ctttgaatat	244560
tttggttcagt	atctttgggt	tttggttttat	tttgccctagg	ggtaaatgct	gactgcctgt	244620
tctctggaca	ggaatggaga	agatgggtgct	agcagggttg	ctgttcatat	gtagacattc	244680
atgcagtcac	tctcttttca	gcacacttct	tacttctgcc	ctgggttcag	ttgctgactc	244740
tgagcccaga	aaccttctag	ggttctgtta	ggtagattgg	cttccaccgt	ctttccagaca	244800
accacagaaa	attctagact	gtttttctct	ggggcttcat	tagtcaactt	gcttcagtct	244860
gtcttgcatc	ttctaaatat	ttatagatct	ctctcttttg	ttggagtggc	agaaaatgct	244920
agttgaccac	ccaatattca	aattatcctg	cctccttaat	aacagaatat	cattggatgt	244980
ggtgggtaaa	taatataccc	taactttcct	tgacagagag	ggtggccaat	gagatggaaa	245040
tgagagtcat	tgggaagagc	tcccaagaca	tctcttttaa	caagacagac	tgaagcaagt	245100
tgactaatga	agcccaaagc	tagcagttgt	tttctgttat	ctttgocctc	ttcttcttct	245160
tctgtggggg	acaaagggca	gtgatatactg	gagctgcagc	agccattttg	gcataatgtt	245220
ggaaaagcca	agagactctc	agagaccgca	gctccagcag	ttttttattt	tttccaaata	245280
tttgctccac	tgaggaggga	tgagatatctc	gtgtttgttg	ccttggtgact	gtaggaggac	245340
tgactttccc	tgctttgttg	tcaagtttcc	ccatgtgggtc	tgctttggcc	agtaaaacat	245400
gagtgggaga	agcttgggtga	accattgcat	gtctaccagc	ttttttgctc	tcttcccttt	245460
ggcattagaa	aggatggagc	taacatataa	tgcttcttca	gcctagattg	ggttatgaga	245520
agctagctgg	gggagtcag	tatatatata	agcgagttag	aaataaaaact	ttgttgttgt	245580
aagctatata	tatatatata	tatatatata	tatatatata	tatatatata	atatgtatgt	245640

FIG. 6K3

aatatataaa	tacatatattat	actttaagtt	ctaggggtaca	tttgcacaat	gtgcagggttt	245700
attacatagg	tatacatgtg	ccatggttgg	ttgctgcacc	catcaactgc	tcattttacat	245760
taggtatttc	tccctaatgct	atccctcccc	agccccccac	ccctcaacaa	gccctagtgt	245820
gtgatgttcc	ccttcctgtg	tccaagtgtt	ctcattgttc	aattcccacc	tatgagtgag	245880
aacatgtgg	gtttggtttt	ctgtccttgt	gatagtttgc	tgagaataat	ggtttccagc	245940
ttcattcgtg	tccctgcaaa	ggacatgaac	tcaccccttt	ttatggctgc	atgggtattcc	246000
atgggtgtata	tgtgccacat	tttcttaatc	tagtctatca	ttgatggaca	tttgggttgg	246060
ttccaagtat	ttgctattgt	gaatagtgcc	gcaataaaca	tatgtgtgca	tgtgtcttta	246120
tagtagcatg	atttataatt	ctttggatat	ataccacgta	atgggatcac	tgggttaagt	246180
ggattttcaa	gttctagatc	cttgaggagt	cgccacactg	tcttccacag	tggttgaact	246240
aattttacact	cccaccatca	gtgtaaaagc	attcctattc	ctatgtctcc	acatcctctc	246300
cagaatctgt	tgtttcctga	ctttttaatg	attgccattc	taattggcct	gagatgggtac	246360
ctcattatgg	ttttgatttg	cattttctctg	atgaccagtg	atgatgagca	ttttttcatg	246420
tgtctgttgg	ctgcataaat	gtcttctttt	gagtagtgtc	tgttcatatt	gtttgccccat	246480
tttttgatgg	ggttgtttgt	tttttttctt	gtaaaaattg	ttcagttctt	tgtagattct	246540
ggatatttag	cctttgtcag	atgggtaggt	tgcataaatt	atctccattt	ctgtagtttg	246600
cctgttcact	ctgatgatag	tttcttttgc	tgtgcagaag	ctcttttagtt	taattagatc	246660
ccatttatct	attttggctt	ttgttgccat	tgtttttggg	gttttagaca	tgaagtccct	246720
gcccatacct	atgtcctgaa	tggatatgcc	taggttttct	tctagggttt	ttatgggttt	246780
taggtctaac	atttaagtct	ttaatccatc	ttgaattaat	ttttgtataa	gggtgaagga	246840
tggtttccag	tttcagcttt	ctacatatgg	ctggccagtt	ttcccagcac	cattttattaa	246900
atagggaatc	gtttcccat	ttcttgagct	acagatatct	tgagtttggg	taccacagta	246960
ttatctagt	gaagttgact	tatacagtat	gtaataggat	aaatataggt	gtgtaacaga	247020
atattaagtg	ttcgtgtttc	aaagctgagg	ggaaaatggt	aaaagtgttc	acacactcta	247080
aaaagagatt	agctaaaact	gcttcattaa	ccacactttg	gggaaaccag	ttctgagatt	247140
cttctccatt	actctgacag	gttggaccct	ctggggagca	gatctcaaga	tcaagttatg	247200
agtgcgaag	gtgtgttggg	aagcgatggg	tgtaaaagaa	tcctgcagta	gcaccaggca	247260
caagtctgtc	cagggagagg	aggacttcta	ctctctacca	gcctctctcc	taagtccctc	247320
taggggacgg	gggcaaggaa	gtgctgggaa	gggcagggca	tggttcctgg	ctaggactcc	247380
acccccctgg	ggcctgtacc	cacggacctc	ggtgaagaca	ggcactcctg	ccttctcgcc	247440
caacgggttc	gtttcccaag	atcatcctgg	cctgccacgc	ccccatctac	ctattaaact	247500
ccccaccct	ccccaaacc	tagcaggcag	acacacatcg	gtggaagaag	acaggagcgg	247560
ctggacattg	aaaggacgtc	gagaggagca	cacctgcaca	ccatcgacca	gcggaacgag	247620
gcagagtgtg	gctggagcag	tcggagggaa	gcctgggccc	ctgactccag	gggaaaacca	247680
tctcctttct	ggctcccccc	tctgctggga	gatactttca	ctgaataaaa	ccttgcactc	247740
attctccaag	cccacctgtg	atccgattct	tcctgtacac	caaggcaaga	acctgggata	247800
cagaaaagccc	tctgtccttg	tgataaggta	gagggtctaa	ctgagctggg	taacacaagc	247860
tgcctataga	cagcgaaact	gaaagagcac	acaatagcac	acactcattg	gggcttcagg	247920
agctgtaaat	atccacccct	agacgtgcc	ctggggcggg	agccccacag	cctgcccgtc	247980
tagaggtttg	agcagcggga	cactgaagaa	gagagccaca	ccctcatcgc	acgtcctgcg	248040
agggagacaa	gggaactttt	cgggtttcac	ttctgcttgg	cttgagctgg	cactgaagca	248100
ccctttttcc	tcctcactga	gggagcagag	gggaaaagcg	gtagaactaa	caggctaaca	248160
atgctcctcc	gaaaatatat	cgtatttttg	gatccctaga	gatagggtgat	cacggcagcc	248220
gcggagtga	tttgggtctc	cttcaagaa	agaacttgct	gctcagcgtt	gaagaatgca	248280
gttggccaac	agcctccagc	tgctctgtct	tcagcatctg	ccatggcatc	tgagctgagg	248340
tcattgttct	cctgggaggt	ccccagcaga	aggatcacgt	ggaagctcca	caagctccac	248400
agatgttcca	ggagagggaat	aggcagcatt	tgggaagacat	atcctgccat	aacagagggc	248460
atltgttagt	agagacaaca	aacagcaaca	gaaatggggg	gaagaaaacc	acctcttacg	248520
naattcgaac	tccggtaccc	aagtaaacaa	acacacaagc	acaaagcact	ttctcccatt	248580
tccctcatt	gatcctgtcc	gggtagaagc	tggggaggaa	gtagaatagg	gtgagccggg	248640
gtggggctgg	ggggcctaca	ccttcttctc	tccccgcag	gtcctgtccc	tggggccagg	248700
ttgaactagg	ggaatgggaa	aagctgtgaa	gtgaatgaga	attaggagtt	tttatattaga	248760
ctggacttga	atlttttttt	tttttttttt	tttttttgaga	cagagcctcg	ctctgtcacc	248820
caggctggag	tcctcggtgg	ccatcttggc	tcactacagc	ctctgcctcc	cgggttcaag	248880
cgatcctccc	accacagtct	cctgagtagc	cgggattaca	gggtgcctgcc	accatgcccc	248940
gctatltttt	tttttttttg	tatttttagt	agagacaggg	cgtcacctgt	ttggccaggc	249000
tgggtctcgaa	ctcctggcct	caagtgatct	gtccgcctcg	gcctccccaa	gtgctaggat	249060
tataggagt	agccaccacg	cctggcctgg	acttgaattt	ttaattccta	aaaatgaact	249120
accagttaaa	atlttaaaaa	gacaaaaaaa	gctatgggat	atgctgatgt	tttgctttgg	249180
ggataaggaa	aagatatctg	gttgagcgcc	attgaaaaca	gtgtaggggag	agaaaaactc	249240
attcctggct	caccttttgc	agtcccacta	tctcaataat	ctgatgttat	atgacacaca	249300
cacacacaca	cggaggaatc	ctggaagact	ccatatcaag	gtgggtgatga	aggtgaccag	249360
tgggtgatag	gattataggt	gtgtgtttat	ttatlttatt	taattacctt	tttttagaga	249420
cagggtctct	gtcatccagg	ctgcagtgca	gtgggtgtgat	catggctcac	tgcagtcttg	249480
cactccaggg	ctcaatcctc	ctgcctcagt	ctcctgagta	gctggagctg	cagtcatgca	249540

FIG. 6L3

ccaacgtgcc	caactaattt	actttatttt	atthttttatt	ttttgttaag	atggaatctc	249600
actttattgc	ctaggctggg	cttaaactcc	tggtttcaag	cattcctcct	acctcagcct	249660
ctcaaaagtgc	tggaaattact	gcacttggcc	ctattatatt	tttaaaaaat	ttcaatagtt	249720
ttaggggttaa	aagtggtctt	ggttacatag	atgaattgtg	tagtgatgaa	gtctggattt	249780
ttagtgtacc	catcacccaa	atagtgtaga	ttgtacccaa	tgagtagttt	ttcattcctc	249840
acccccacac	tgtcccccact	tctgagtcct	ctgatgtcca	ttatagcacc	ctgcttttgc	249900
gcacttagag	cttacctccc	acttagaagt	gagaacatgt	ggtagttggg	ttcccttccc	249960
tgagttactt	cacttaggtc	agtggcctcc	aatttcatct	gagttgctgc	acataacatg	250020
atthtcattc	ttttttgact	gagtagtagt	ccatctctct	ctctcacaca	cacacatata	250080
cacacacaca	cacacacaca	cacacacaca	ttatctcact	catccattga	tgggcactta	250140
gggttgcttct	atatctttgc	aattgtgaat	tgtgctccaa	taaacataca	tgtgcaagtg	250200
ctgttttttt	tcccttttat	ccttcttttc	ttccctatgc	ttccataggt	actgagaaag	250260
agtctttttt	atataattat	ttcttttctt	ttgggaagat	acccagtagt	gggatggctt	250320
gatccaatgg	tagatctggt	tttagttctt	tgagaaatct	ccatattatc	ttcatattgt	250380
tttccataga	gattgtacta	atthacattc	ccaccaacaa	tgtatgtgtt	ccattttcac	250440
tgcacggca	ccaacaacgg	ttgttttttg	actttttaat	aatggccatt	ctggctgggg	250500
taagggtggt	tctcactgtg	gttttaactt	gtatttccct	gataattagt	gatgttgagc	250560
atthaggaaa	tatatttggt	ggccattttg	atatcttctt	ttaagaaata	tctcttgaag	250620
ttgtttgccc	actttttaat	gtgattatth	gttttttttt	cttgctgatt	tgtttgagtt	250680
ccttgtagct	tctgaatatt	agtcctttgt	cagaggata	gtttgcaaat	actttctccc	250740
attctgtagg	ttgtctcttt	actctgttgg	ttatttcttt	tgctatgcag	aagctttttt	250800
gaataattag	gtcccattta	cttattttctg	ttattttggt	gcatttggtt	ttggggtggt	250860
agtcacaaat	tctttgccta	gaccaatgtc	cagaagagtt	tttcctaggt	tttctcttag	250920
aatttttatg	gtttcagggt	ttagattttat	gtctttaatc	catcttgaat	taatttttgt	250980
atatgggtgag	agatagggaac	ccggtttcat	tctttttacac	tacatgtggc	tatccaattt	251040
tcccagcact	gtttattgaa	taggattttcc	tttcccccagt	gtatgttttt	gtttgttttg	251100
ctgaagatca	gttggttgta	ggatatttgg	ttattttctg	ggttctctat	gctattctac	251160
ttttataccg	gttccatggt	gttttgatta	caatagcctc	gtagtataat	ttgaagttgg	251220
gtaatgtgat	gcctccagat	ttgctctttt	tttgcttagg	attgcttttg	ctattttggac	251280
ccctcttttg	tctcatataa	atthtttagg	tgggttttct	aattctgtga	aaaatgacat	251340
tggatttttg	ataaggggtg	cactgaatct	gtggattgct	ttgggtagta	tagtcatttt	251400
tacaatatgg	attcttctaa	tccataagca	tggtagtttt	ctccatttgc	tttgttcatc	251460
tattattttct	ttcatttagt	ttttgttaatt	ctcctttagg	gggtctttca	cctccttggt	251520
taagtataatt	cctatgtatt	ttatttttat	tttttgcagc	tattgtaaat	gggattgagt	251580
tcttgatttg	atthttgagct	tggccatcat	tgggtgatag	cagtgttagt	gattttgtgt	251640
cattgatttt	gtaacctaac	actactaaat	tcacttatca	aatctgggag	atthtttgagg	251700
attccttagg	atthttctagg	tatgagatca	tatcatgggt	agaggtagtt	tgagtttctc	251760
ttttccagtt	tggatgcctt	ttatttcttt	ctcttgcctg	attgctctga	ctagggtctc	251820
tagtactatg	ttgaatagaa	atgggtgaaa	gtgggcatcc	ttgtctcatt	ctaattttta	251880
gggggaaatg	ctttcaactt	ttcccccattc	atthttgatgt	tggctgtgag	tttgtcatag	251940
atgattctta	ctatthttgag	atatattcat	ttgatgccta	gtttgttgag	ggattttatc	252000
ataaaaggag	gctggatttt	attgaatgct	ttttctgcat	ctattaaaa	gattacgttt	252060
ttcatatttta	attctgtttta	tgtcatgaat	cacattttat	gacttatgtt	tattttgtgc	252120
ttacattctac	tttctaattt	tactataata	aacatgtata	atthttgttat	cagaaaagta	252180
aatgtaaaag	tgagtttttaa	ttttaaaact	tgggctctaag	tcttctctgcc	tcccaagccc	252240
attcccttcc	tgatattctgg	ggcttccctc	ctcaagcctg	ctctgcagga	taaggggata	252300
cagtccacat	gcctgctgct	ggtttggccc	atgataacct	ccatgggcaa	tgtctgagcc	252360
tctgctgttg	agttttgctt	tacacactcc	tggcaaggaa	aggatggcca	acatggcttg	252420
gacatgggtt	gctgataatt	ggtgatgtct	catgactggg	tctgcctgga	gggcttgctg	252480
taagtccctg	ataggaggaa	catggacctg	cacaagagca	gaacttatct	gacactgaag	252540
aggacacttc	aagaacagat	tatcaaagtc	tagctcaggg	agaaatatac	tttagagcag	252600
aatgaggaat	ggcgaggcag	ctgagcttag	acacaagcag	aaggaaatcc	atgggtgagg	252660
cacaggcaag	gaaaggggct	gagagagcat	tagtgggggc	agtcaggggc	agtggtcagg	252720
atgctcggat	gccagcgtga	acaatcgcat	caagattaaa	caccatgagg	atcgtaaaac	252780
ttcctgtcat	atgtctccag	gtgggtctcc	aaatatctta	aaccagatga	cagaccctct	252840
ccaccctctg	ctgtataaag	acatctgctc	ttctataatc	attcccatat	agcaatttat	252900
cattttttatt	gattttttctt	catttaatac	acgtataagt	gtgtctttta	tttttaaaaa	252960
tttgcatctc	tttaattgct	ttggagattg	tgcatttttc	tctctgttga	tttactctgc	253020
caataaacat	gtaattctac	cataagcatg	ttttacttgt	gtaatcaacc	aaaataaaaa	253080
atthaaaaag	gaatcactga	ctatgaatta	gacatgtgga	taggcaccag	ggttgcagac	253140
atggcccacg	ttcttgcaat	aacttgcaat	gtggctgggg	cattggatgg	gtacattaaa	253200
aggattaaag	taatataagg	cagtatttat	taagtgttga	gtgagcacta	cagaacccaa	253260
gtgctgaggg	agtttcatgc	aggaagagat	caagagtaac	acagagaaga	agaatagatc	253320
aatttagcgc	attcattttaa	aaattcacct	tttgcataag	gggatgtgtc	ttttgtgggg	253380
aggagggggg	ttctgattgg	cagtttgttc	tcaggggagct	tgaagaagag	atcttgagga	253440

FIG. 6M3

ggagatgcag	agaaaacaaa	tgaagaaaat	gtcaaaatgg	aaggggttgg	cccggtatg	253500
cataccttag	ttagcttagg	tagagtctaa	actttttacaa	gtgggttcaa	taggtgtgtt	253560
tggctctgggt	tcttttgggag	gtatcatagg	agaatgaagg	cagggaggac	gcttccagca	253620
ccaaaattca	aagggaaatg	tattttacat	gcatagcatt	gttttactct	ctttccattt	253680
ggagcatatc	ttaaaaattc	catttggagc	atatctttaa	aaaccatttt	ctctgaccaat	253740
ggttctaaaa	gggggaaaca	tcttttgcaa	cagaatcatt	cattctctca	ttcatcaacc	253800
actgatttgt	tactaagtgt	cagacctgat	ctccatcctg	cctgggtatg	cactagcttc	253860
tgtcttgaga	caagcattgt	gataaaacat	gaccaaaaaa	agggcagttt	tataaacaca	253920
agtctgccag	gcttttcagca	attctaaatt	tctttttgca	agtcaggctg	gagttaattg	253980
ctctttcctg	cagcgttgga	gatgacaggg	ctctcccaca	gtgctgagca	ggcagtttga	254040
aagccccact	tctgtgtctc	gcatgggcga	gtgtccactg	gaagccactg	agaggcaagg	254100
gggaaacctc	agaaaccggc	ccctgcctgg	ctgcttcacc	ctagaaagcc	caggcagagg	254160
agggaaaggt	gaagtgtctg	aaaagaataa	aaaaggggga	acatgaaaaa	gagcaagagc	254220
aggaaggagg	cagggacggg	aaaggagggg	aagcacggaa	acagccaatg	tcaaggagaa	254280
gaaaagatgg	ctgggtggaaa	ggagcttcca	ggaattggga	cacagccctg	tcttatttga	254340
aaagatggaa	accctgaagg	agaacaggaa	ggaaaaagaa	aacaagtccg	tctgagctgg	254400
cagggtccac	tttctcattc	tacagatgag	gaaacagagg	cacagagagg	aagtggcttg	254460
cccaaggggg	cagattcttg	aaaggatcat	ctgcactctc	tctcccttaa	tgcattctta	254520
cctcttcttt	actcgtgagt	cagtcctgaa	ggacaagctg	cctgaagtcc	cacacagatg	254580
ggcctggggc	aagcatcaaa	catcctgggg	gccctgggtg	aggtttgtct	ttaaattcca	254640
ggtcagggaa	aggaaggtct	ttaagttgtc	tgtcttaagc	ttagtaatcc	ccctcagagt	254700
tatgggtgcg	tggtctgggg	tagccgttgc	gtctctgggc	aaataccctg	gagaatgcag	254760
tgttggttgt	ctgagctggg	gacagagtga	cagcatagtt	gcatgcagag	ctggagggtc	254820
ctgcagctgt	acaggttaagg	tgttgaaatt	ctccaccaac	ccttctctct	tgcccccagc	254880
accacgaaga	taaccctctt	tgaatatgtg	gaagtctgtt	ctccaaactt	tctaacattc	254940
tcatgtcagt	cttaatatag	tcagctcagt	tactgcctcc	tccaggaagt	cctccttgtc	255000
tgcaaatcgg	ctgcccacca	tgccggctca	ctcatagttt	taactctgta	tctttctaat	255060
atgccttagc	ccactctgtc	aggattccag	tcagcttctc	tctcctagac	taggtagtgc	255120
ctcaggccag	gaggaccagc	cttgttcata	tctgtaccct	gcaaaccctgt	caatgcccac	255180
acctgctcag	tgctttggag	tatggaacca	gccgtcaatg	caggaatgtt	acactctaag	255240
agttcccaaa	ggtagagaga	tgagggattg	gtgctggaag	tgggaggtta	ttctaaggat	255300
gggtatggca	ggaaacacaa	ttatagttca	gggagtggag	tgtccaggag	tgggaggaga	255360
ggaactggga	gaaagagcag	agagtgaag	tgagagcggg	cacaaagaaa	gggaaaaaga	255420
gtcagggatc	aaccaaagtg	catgcttctc	tttcagccct	gccaggatgt	gcaggggcgg	255480
tgtctgtggc	gcgtcaaggc	tcagcctcaa	acatgtcttc	ttccttgact	tttgtctatc	255540
attctaaaag	taggtcattt	aaaaagttct	tttgttttct	ttccaccgat	actctgattt	255600
ctgacattcg	ccaaaaagag	gtcaagaccc	tggcataccg	ccctactaag	attaaaaata	255660
atattatcca	ttgaaactgt	tatttttttc	ttaactgtta	ttttagagat	ttaaagattc	255720
catgatcgcg	ctggctctaa	catcattttt	ggctcttttg	agatcaaat	tgcaatttga	255780
tgcaaaaaata	gctgtgacgc	atatgtgtct	gtatgtgtgt	ggttaggaga	ttttttatca	255840
ttacatcttc	ttttgccttg	cctttctgcc	tttctgtcct	tttaatttgc	gggcttttgg	255900
caaccacagc	acgggtctgg	tttcctagga	gtttcttttg	taggatcaaa	ccgctagtgt	255960
gctcttgggc	ctgtgatagg	gccctggggt	aacttatttg	gaaaaatgtg	ctgtaacccc	256020
tgcccagagg	tgccctgtgc	atgggctgcc	atcttctctc	cttcccttgg	cttcagcccc	256080
acctagaagc	ctgaacaaac	attttctctg	acatttcata	aagtgtcagt	ggctctccat	256140
ttagcaaaat	acatcccagg	gaagttcaaa	agtgaaaaaa	ggccgtaact	tcttcttctt	256200
ctcaggggacc	tacagaaaat	atgtggcacc	tcggcagcct	ggcctgcagc	actccccctc	256260
ccatcggtga	gtcctgctac	agtgggtcca	ggtgtctgga	cgcccggcac	gcacggctct	256320
ctgcagacct	ctggacagta	ccatgggagc	cgcacagtcc	ctgcctgttc	tgtccggcag	256380
ttcttgtttc	ccagcacctc	gtctcagggt	agagtttccc	tcttctgctg	ggcttctctc	256440
ccctgctgtg	aaccccaaat	atctgaggca	ggtaatttta	ggaaccttat	tttgccaaag	256500
ttgaggatgt	accatgaca	cggcctcagg	aggtcctgaa	gacaagtgcc	cgagggtgat	256560
gcggcacagc	ttggttttat	acattttata	agacatcagt	caatatatgt	aagataaaca	256620
ttgggttcggt	cccgaagggc	cggacaactc	caagtggaga	gggggcttcc	agttcacagg	256680
tagataaag	acaaaatgtt	gcattctttt	gagtttctga	ttagcttttc	caaaggaggc	256740
aatcagatat	gcattttatc	cagtgagcag	aggggtgact	tggaaatgaa	tggaaaggcag	256800
ttctcagttt	aaattttccc	tttagcttag	tgattttggg	gtcccaagat	ttattttcca	256860
ttcactctgc	agacaggggc	ttctgtgcat	ccaggagacc	cctcctcaca	gaaggaagca	256920
ggccatttaat	gagacccaat	ccagcttcaa	ccacctggta	acaattagga	catcacttct	256980
ctgagcaaga	gctcctgcct	gtccatgagt	tatcaagaca	ttccaattgt	tcctccacat	257040
ctttgacatg	aagactttgag	ggggtcagat	tttccagggg	gcttgatggc	atgttctctt	257100
cactgttccc	tgccctggtc	atccaagtga	cccttggcag	ggaagaggcc	ccgagtttga	257160
gaatctctgt	tctcacagc	cattgccaac	ccggagagtg	gctttgccac	tattcctagc	257220
atgttgttgg	ctatttccagg	aatgggagta	tttgactttt	ccctttgcag	tgattgtctg	257280
aaggagagga	attgagagac	tcaagtccct	gagataaata	tttatcaact	attactgaaa	257340

FIG. 6N3

gggagtatgt	caaagaaaaa	atgtggagaa	acttcagctt	gaacacatag	tttaaatacca	257400
gcttgggtgt	actccagtg	gcatggatgt	attactgttt	tgcagtgc	tcttctatga	257460
tcaatacaca	gaagcaaa	ggccacgtgg	gtaaacagta	attttcat	accagggtga	257520
atatggaagt	cctcttgtt	ccatgtcatg	atgaaggaaa	gcaaggacca	tcttttgcca	257580
aggaacagt	gctgtgggg	aactgaggag	atggaaggac	aaggcagtc	aaagctttgg	257640
aacaactctt	tttttgagat	ggagttttgc	tcttgttgct	caggctggag	tgcaatggca	257700
cgacctcggc	tcaccacaac	cgctgcctcc	caggttcaag	tgattctcct	gcctcagcct	257760
cccgagtagc	tgggattgca	ggtatgctcc	accatgcctg	gctaattttg	tatttttaaat	257820
agagacggga	tttctccacg	ttggtcagct	ggtcctgaac	tcccgaacct	aggtgatcca	257880
cctgcctcgg	aaacccaaag	tgctgggatt	acaggcatga	gccaccatac	ccggcccttt	257940
tttggaaataa	ttttataggt	tttcaaaacta	ttacacttac	ctttttatat	aagagacagg	258000
acatagtcac	tgaacaatca	ctccagat	taagtaagtc	caggatggga	tgacaatgga	258060
acaaccatga	aatgaaagga	agaatgtgtc	actgggtatgt	ccacacgtct	ccaaatctct	258120
cacctctgtc	agctgcaaac	agagcctgaa	ataaatgttt	cctctgtgca	cagcctccac	258180
aacttctctc	ctccacgttt	ctcactcact	cctctccagc	acttctctct	gggttctgtc	258240
tacaaacttg	aaacccgcta	tgcaaaaatt	ataactgtgg	aaattatgac	agtgaagag	258300
atcagaccta	accgactcca	tcttgcttct	aacctttaag	ctgtccttgt	tcatttttgg	258360
gctgaactaa	ctttgggaag	gaattcagtt	catggtagaa	ctctgaaaca	aaattgataa	258420
tagccctttc	ctgaaaagac	ccccttcttg	cctggggaca	agtctgccat	tgtaggacta	258480
acaaattaac	tacaagatta	gaaattaagg	tttaggggtc	atgcagcctc	cagttccaag	258540
agtctaaacc	tccccaaatt	gctcctgggg	ataacatcac	tggtgtaaaa	gctaagacca	258600
gtgcttgaga	tattttgtag	acocctgctc	ggatggatca	gctgacacca	tccagactgg	258660
taatttggtc	caaccagctc	tgccatccca	cccggaaca	gaaaaatact	cacttcatca	258720
ccccatgagt	ccatctctaa	cctgaccaat	cagcactccc	tacttcccag	gcccctactc	258780
gccaatctg	cctttggagg	cagataacaa	cttatcttta	aaaactctga	tccctgaatg	258840
ctcaggagac	tgatttgagt	aataataaaa	ctccggctct	gcatgaatta	ctccttttcc	258900
attgcaattc	tcttgtcttg	ataaattggt	tctgtctagg	cagccagcaa	ggcgaacct	258960
ttgggcgggt	acaaactcat	cctctgtgga	agagttagg	ttcatggaga	aattgggtgc	259020
aaattacaaa	attttattgt	aaggtcaact	tgtcccagtg	tccgtctgtg	cagcgaagg	259080
cccctgcatg	gttttagtgat	tgcaagttga	gcctctaggg	tcagggtgtc	taggtttcca	259140
tcccagctca	ttcacttatt	atctgtgtgt	tcttgagcaa	gctccttaat	caattgaggc	259200
tttgtccttc	tgtttgtata	atgatgagaa	taataacctc	cacaataacc	tcatacataag	259260
gttgttgtga	agatggatca	gataatatat	atgtagatgt	cttataacag	tgccctggcag	259320
ataaaaaaatg	ctcaaaaatc	ttaagtgtta	ttataataaa	actgacatat	atttctttgag	259380
cagggtgggtg	gtaaatgggt	gttcttttta	ttaagcttta	aagtgtgcat	agatcatatt	259440
aattcttttt	atgcatatga	tatattgcac	atgcatgaaa	atacatgcat	taaaaataaa	259500
tgagcattta	tgagatttag	tttagcagtc	acatgtccca	ggattacaag	ccagcaataa	259560
tgggttgga	aacattccaa	cccattccaa	ccattggaaa	acattccaac	ccatcactgg	259620
accocatgtg	caacaatgg	aaccgcccac	aggttctcat	tcttggttaa	aaaaatatga	259680
ttattacggg	aataatactg	attccctaag	aatataatc	tgagcaagtt	tctttttttt	259740
cctgtcttct	tggaagatca	gcaggttcta	gattcaatgg	agtcactagg	attgagccac	259800
cagtatacgc	cagtcctctc	cagaacggcc	acctgggtgt	gggcactaag	gcagtcctcag	259860
atgaggactg	attgactttt	gtgtgaactc	aaactgccaa	agtccctccc	tcacottgca	259920
aacttcaaag	caccactttc	aaagcactac	tttctttctt	ggctctcaat	tctctgccta	259980
gaaaaaggga	ggtgttgga	aggatgtttg	tttagttctg	ggcatcagtc	aatggtaacc	260040
agatcttgct	gaacagaaaa	gacacagatt	tgtttctctg	aggcagttgg	tagtgcttat	260100
tgcttattgc	tctcaggggc	ttctgcagca	gtagaagggc	cctcttcccc	tgccatgcca	260160
cactgagagg	agcatccttg	gagtcatggt	tggaaatctgt	ttttgttatg	ctagtcctct	260220
tccgcatgct	agctggtgca	ttgcagggat	atgtgtacct	gtttatcttc	tccactaggg	260280
tctaagaagc	cagggttctt	aaaggaagga	agctgatctt	gtttatcttg	aagtcctcac	260340
agtgacattg	ctcagtc	gttgagtgt	tgaatgaata	aacgggaacc	atcacgaaaa	260400
agccgaaaa	acagtggaaa	gactggatca	taaaatcttc	taagcaaatt	ttttttctct	260460
ttacactcca	tttccaaata	gataaagtat	tttttaaaat	cctatcagaa	tattctaaca	260520
cactgagttg	acagaataga	gattttttaa	tgcagtgtca	tttggccagc	catttgtgag	260580
aatttataaa	tgtttcagta	ggttgaaaa	actataaaag	caaggactat	gttcataacc	260640
aacagctggc	aatgtataat	aatgcta	gaacattct	cttctctttc	aagagtcagc	260700
ccaaccagtg	accctgacaa	gaagggaagg	acatttaact	caatttaatg	aactcttata	260760
gagcatctcc	ttctccaagt	gctttgctaa	ggatggggta	aaaacatgaa	taagtcttgg	260820
attctgtcct	tcaggaattt	tcagtctttg	gaggcagata	catttgcacc	caactattat	260880
cctaggcaga	gtgtgataag	tacgataata	gcagtaaaag	ctctaagtta	ggcaggagag	260940
gaggagctcg	ttaaagctta	tggggcctgg	gaggctttcg	gcggagtaaa	ctccaggggg	261000
acagctaggc	atctggctgc	tggaattggg	aggaggatca	ttttaagtgg	ctacaactct	261060
gggtgcacag	gactagaggg	tgagggccaa	gatgggaaat	tgtggcagcc	atcttccaca	261120
ctgggcgccc	gccgaccctt	gcttctctgg	attcataatta	ttgtgtagt	ttccccaaca	261180
ttgtatcagg	gttggcctgt	gtgaccaatt	gcatatggtg	ggaatgatgg	tgtgtgactt	261240

FIG. 603

ctaagaccag	ttcatagaag	atgtggccaa	ttcccttact	gtcttttttt	ttggcagggg	261300
agtgccgagt	ttcaccccttg	tgcgccaggc	tggagtgcaa	tgggtgcgatc	tctgctcact	261360
gcaacctctg	cctcccagggt	tcaagtgatt	ctcctgcctc	agcctoccaa	ctagctgtga	261420
ttacagggtat	gcgccaccat	gcctggctaa	ttttgtattt	ttagtagaga	cggggtgaga	261480
tcaatgaggc	agtcaattgg	ccagcctggt	tttgaactcc	tgacctcagg	tgatccaccc	261540
gcctcggcct	cccaaagtgc	tgggattaca	ggcatgcgcc	aaccgcgcct	ggcccttact	261600
gtccttttga	tcagctgctc	tggggctagg	tcaatccttc	atgtgactgc	agccccagcc	261660
aacatctgga	ctgaaaccca	tgagacaccc	tgagccaaaa	aagcccagct	aagacttcct	261720
gcattttctga	cccacagaaa	ctgagaaaaa	aaatgttttg	ttgttgcttt	aagccactga	261780
cttctgggggt	catttgtttt	gcagaaatag	atagcagata	cagaaaagca	ggctggtgga	261840
acagtgtggg	aaacaccttg	attttccagg	agttgcactt	tgtttatgtg	caatggtgca	261900
ctgttttttag	aaagacacaa	agatgataat	actggtgatg	ggcataatac	gggttgtcaa	261960
gaggagtgc	tgaggcgggg	ataattttaag	aggccacagc	agtagtgtgg	caagaggtaa	262020
tgagggaatt	gaacttggtg	ggaatgggtg	agatcaacga	ggcagtcaat	atgggcagtg	262080
agtgtgaagg	agctgcgaag	gatgattcct	tggttttgag	cttaggaaca	tgagagaacc	262140
aagatctcat	ttatccaaag	aggaaacaca	gaagtgcgcc	cctgtttggg	ggcagggtcg	262200
ggtaggagga	aaagagtggg	gacgtctatc	tcccaggaa	gagagccccc	tgcttccaga	262260
tcccagtgga	tggcagggca	ctcggctcat	tcacagactg	ggctcgttga	gaaacctttc	262320
cctggagggg	agggctgctc	tgtttcacag	cccatacccc	tcatggccaa	gtgttcctcg	262380
agtgcagctc	tctgccatca	atattttttag	catgtggtct	ttcagagact	aaagagtggc	262440
atccatctcc	tgaacctcct	tcccagctg	acagctgggt	accctgggag	gaggagctt	262500
cagggagcct	gatgggagag	agtcgtttcc	aattgccaatc	cattggaaga	gatgagctca	262560
gacccgagtt	tgatagaaaag	cctacttcct	cccttgtatc	cagctgtgga	gacctaccaa	262620
catcaatgca	aaccagaagc	taacacccag	ttcatatatc	ccaagtggaa	ggaagcttct	262680
cgtggaattg	tcttacatga	cagtaacata	aatcctgaag	gtaataactg	gccaggtaat	262740
gttagaaaag	aaccggaaca	taggcattgc	tattatagat	cctaggatag	gcctgagcaa	262800
aaactgtctg	ggattcataa	catgcttcgt	tgcaatctga	tagagggagt	gagatccact	262860
ccaaatggag	tctgatttgg	ggcaaaagcaa	agagtatgga	aggaaacttg	agaaaggggg	262920
acagcttctc	aaatggagtc	tggccacagc	tggggctgga	aaagagacat	gactgcgctt	262980
gcagagtggg	gagaatttgc	tgctagaatt	tttaagttgt	gtgttttcat	ttttatgata	263040
atgtaaaactg	agataagcat	attctctgct	atcccaatga	gccccctctc	taggaggact	263100
accttgccac	cttatccata	aatgtgttta	taaattattt	tgatgccagc	tggtattttt	263160
taaaaagtgg	ttttggactc	acaaaaaaaa	ccatgatgga	tttaatacat	aacaaagcat	263220
ttgtgtcaag	tgaaggccaa	gtaacatctt	agcgtcctgt	gtgagcgaag	gtgtcgtggc	263280
agttcaaaca	agaatgccga	tgaagctgcc	caggatggcc	aaggccacct	tggtgtgttt	263340
gaggggaatt	agagttttaga	aaaaaaaaaa	aaggcacctg	acactctgaa	ctaattgtgg	263400
tacctggaat	tttgggggtt	tgaagctttg	catttaattt	gcagcttatg	gcctgaaggga	263460
aaagacaggt	gaaatgcata	tccctgggatg	agtcacctgg	aggagagggg	tgggaagggg	263520
ctgagctgca	catgctcaga	tcttctccca	ggcttatcga	cccagtgagt	caagtcttct	263580
tccaacggga	tagagtgtga	gagagagcag	ggaacagaag	ccagagtctc	tgttaaattt	263640
ctcggtacat	ttctgtttaga	gaatgggaag	ttctctatcg	taggagacct	tgagagcctg	263700
ggatagaaat	tacccctttg	tcattgtatt	tcctcccaga	aatagcatgg	ccactgtcac	263760
tgctaagctg	gagtatcatg	agcacaaatt	ctctcacttt	ctatacccat	gccttttctag	263820
gagattgggt	gtccatcaa	aaaggagtta	acaaagaagca	gcactatttt	gtggaataga	263880
atcatcacca	ttatcaccat	cagcacacc	aaccagcacc	accattatca	aaagcattca	263940
cctgggtgtct	gccttacaaa	ctgcaaaactg	cagtaggtat	ttgtaataga	atgttttctt	264000
tcccccttgg	gatctgcaga	aaagctggag	aatgttttgg	tatcaacaca	ctaggttgca	264060
ttgctaataca	tgtgatggcc	ccatgacagt	ctctgttggc	tggtgtagtt	cagggtggacg	264120
actgcaggat	tttgttcttg	gagcctcagt	cttgactggg	cttgggggtg	aaaaggtttg	264180
ggagccagat	tacaagagta	tttgatgggt	agaataatgg	gttcatocaa	aagatcacca	264240
gaatggttat	taaatagtac	aaaggaggaa	tttactggta	ataccagttt	gcaaacagag	264300
aagagagtct	ccaatgtgga	ctgaaagtgc	tctctctttg	aagaggggaa	ggacagattg	264360
ggtttttatgc	ctcacaggac	tggtaaccata	catattcagc	aggtttttgg	ggaaaatcta	264420
tacatatatta	taaggtgagc	tgatgcctgc	ataatagata	aacatatatg	taacatactt	264480
ttcatattca	ttttgggact	gggtttttggc	actaaaattt	gtggaatttg	gctcttttatg	264540
ttaaaagggtg	aactagagga	cacaaagacg	gtttgtgtgc	accctctata	aactggctga	264600
aactggctta	aggtctgcaa	ctgcttatcc	aaaaagaatg	tttgtaaggc	caggcctctg	264660
tccagtcaga	gttgtagtgg	tccaggttgt	aaatcaaagt	ttatagctct	ttttgttaga	264720
gagttcagct	gtaggaattt	agaaatttgc	catgcctgcc	aggccctgaa	ccttttgacc	264780
ataggttaact	ttatttccct	aaccttaggg	tcagtcttag	ttgatattgg	gcattctattc	264840
tggtatctca	gatcctatgg	tcaagagaaa	agatcctcca	caagaggggtc	ctatgtggct	264900
gcaaaaactg	ctctgagcta	aatccactca	aaatcactgc	aggatgtcac	tactagaaaa	264960
tagggcgagg	atagggatcc	ccttcccctg	ctgccagaaa	atgcctgata	gcttacctcc	265020
cccgccctt	gaggctccct	tgggaatagg	acatgcaatc	ccatctccac	ccaatagagc	265080
ttgtcctaga	gctcagtttt	ttcccatagt	ttcccaccc	acttgcacca	gaaaaatctaa	265140

FIG. 6P3

ttaaagtcag	tgattaatac	aattcatttt	atcacgcttc	tgaagattta	agagagagcg	265200
gtcacattgg	attccacagt	accgaccttc	tgacgattct	tcattttcacc	tttatctatt	265260
tttattttta	ttttattttt	ttttcgagac	ggggtctcac	tctgtcacc	aggetggagt	265320
gcagtggggc	aattacggct	cactgcaacc	tctgccttct	gtgctcaagc	aatcctccca	265380
cctcagcctc	ccaagtagct	gggatcatag	gtgcacatca	ccaagcctgg	ctaatttttt	265440
gtattttttg	tagagatggg	gtttcaccat	gttgcccagg	ctgggtcttga	acttctgagc	265500
tcaagtgatc	tgcccaccat	agcctcccaa	agtgtctggga	ttactcacgt	gagccacctc	265560
gcctgggtccc	tttcaccttt	attatctttg	cctttaactc	tagtgcttcc	tccttgaatc	265620
agttaaggat	tgcatttggc	tgcatthaaca	gaaacctgac	tgagaagct	taaccaaata	265680
gggtagtttt	taaagagaga	ttgcttacat	cacgcaaatt	gcacaaattt	taagtgcata	265740
gttcaatgag	ttttgacaaa	tgtagaataa	catagctata	taaaaccatt	ccatcaaaaa	265800
aatttttatca	ccataggaaa	ttgtgtcctg	tccctttctt	gtcaatccca	actcctcccc	265860
acaaggcaac	ccttcattctc	atttctctca	ccatagctta	gttttacatg	tttctataat	265920
acagcatcat	ataaatggaa	taatacagaa	tgcaatcttt	tgtatgaagc	ttcctttggc	265980
tcaatgtaat	gtttatgaga	ttcatccatg	ttattgaatg	tatcagtagt	gttttcatth	266040
atatttccta	gtgttctatt	gaataaatat	actacaattt	gtttatccac	ttattgtttg	266100
atgaacattt	ggaccgttgg	caatttttgc	ctattatgca	taaagctggt	aaaaaacatt	266160
cctgtacaag	tctttcattt	catatgtttt	tctttttctg	aggtaaataa	ctacaagtag	266220
aattgttggg	taataaatag	gcattccatct	aataattataa	gcaactgcac	aacagttttt	266280
caacgtggct	gtactatttc	actctcccaa	tagcaacgta	tgtgttttcc	agctactcca	266340
catgctcact	ggcatttctc	gttgccagtt	taaacatttc	agccattcca	gtggatatga	266400
aatctctctg	gtataataa	ttgtatttct	ctgagacta	attatgtcaa	gccccctttc	266460
aaatgcttat	cagccacttc	tatactgtcc	tctgtgacat	gtccgttcaa	tctttttgct	266520
cattctttta	aaacattggg	ttgtttgtct	ttttcttagt	ttgtcttttg	cttttcatth	266580
ataggagtac	atatcttcgg	aatacaagtc	cctttgtcaga	taaatgtatt	gtgaataatt	266640
ttctcctagt	ttgtggtttg	ccttttcaca	ttcttaatat	cctttgatga	gtggaaacta	266700
actttcaaat	tatgttcagt	agattaaact	gtttttgttt	tgttttgttt	tgttttttgt	266760
ttttaacact	gggtctcact	tggtgcccag	gctggagtg	agtgggtcca	tcattggcca	266820
ctgcaacctc	tgctcctgg	actcaaggga	tcctcctgcc	tcagcctccc	aagtagctgg	266880
gaccacaagc	acgcaccact	acacttggct	acttttttat	atttttggta	gacacaggat	266940
ttcgccatgt	tgctcaggct	ggctctggagc	tcctgagctc	aagcgattca	cccacctcag	267000
cctaccaaag	tgctgggatt	acaggcgtga	gccaccacgc	ccagtcgagt	agatcaagtt	267060
ttaattttat	ggccagtaga	gatctatttc	aaggctctct	attttgttct	gttgccttat	267120
ttatctacct	ttatgccaat	tttcttctct	tttgattcag	atagggttat	aataataatt	267180
attttttcca	gggattagat	ggaccagggc	tggtgaagtt	gttcaaggga	gtgatcaaga	267240
gcctggctoc	tttcatcctt	ctgttccatc	tcctttggct	catggatttt	gttttccaag	267300
tggcaagatg	gcgcctccac	cctttggtatc	ctatttttagt	tcctggcaga	aagaaaggaa	267360
caggctaattg	gccctgatga	gtctaccccc	ttttaacagg	agaaaattta	aaaaacaaaa	267420
accatgaaat	cctttcccag	aggcaacaac	cagaattcca	tttatctttc	attgaccaga	267480
acagaccaca	tggtcactgg	tggtggcaat	ggagactggg	gagatgaata	tttttaagggt	267540
ggcatattcc	agaagaacac	tgtgcactga	ttgcattaat	gaaccattta	atgtgccaa	267600
gggagggttt	cctatgagca	tgggcaaatt	agaacccact	cttggagctg	caggtgagcc	267660
aatccccact	aaacagtgtg	gatgctacaa	gatgggggaag	taaattgatt	ctattccata	267720
ccctaacctc	tctccaagat	gtattcttaa	aatagaagag	ggaagacaga	agaaaacatc	267780
cagaatatat	ttttattgtc	ttttacttct	tcagtgcatt	ttagatcagt	gcttctcaat	267840
ctggcaagg	gcatgcagga	ggatgtgagt	tttatcagga	aaactacaca	accccccaac	267900
cacaatgcta	ccccactcc	tgtggacctt	ccttaagaga	gactcactat	tatagatgga	267960
gttgatacga	ttttaagaga	ggccatatat	tattttgctt	ctgtcttgaa	aaacttgtga	268020
tttttctgta	ttgtgctact	gccaaagaga	atagaaaact	gactgaggtg	tcaatgttta	268080
tgtaactgat	ttcatgtact	ttctgtagtt	ctaccatttc	tgatggttta	aaatttcttg	268140
tgtgtgtgca	gttggggagt	gtgtcctcct	ccttctgctc	ttataccaca	cattagcaca	268200
tcaaaatgct	ctaactcttt	tatgattatg	tggcatgtgg	tgatgcagcc	tcacagtgga	268260
aaaacttctc	ttggggcatt	gcaaatgtaa	catttctttc	aatcagatag	tgccatttaag	268320
gatttccatta	tggccgtcac	atcctgtgac	atctcctaac	atgcagcatt	agggcctaag	268380
tgcagccctg	caggtagagt	tgccaggttt	aacaaaataa	aattacacgc	tggccaggcg	268440
gggtggctca	tgctgttaat	cccagcattt	gggaggctg	aggcaggtgg	atcatttgag	268500
gtcaggagtt	cgaaaccagc	ctggccaaca	tgggtgaaac	ccatctctac	taaaaaatac	268560
aaaattagct	gggcatgggt	gcaaatgcct	gtaatcctag	ctacttgcca	ggctgaggca	268620
ggagaatcac	ttgagccctg	gaggcggggg	ttgcagttag	cagagatcac	accattgcac	268680
tccagcctgg	gtggcagagc	gagattctgt	ctaaaaaaca	acaccgtatt	tggggcatgc	268740
tgatactaaa	aaattattca	ttgtttgtct	gaaattaaaa	tttaaatttg	gggcccgtga	268800
ttttactggg	caacccattt	gcaatatcag	caacaatctc	ttattcagac	cactgattaa	268860
gtgtgcaaaa	tttgaatctc	tgaacagtag	ctatgtcctt	gatatcttaa	attaatgagt	268920
gtcttagaca	ctcaaagcag	gaggaagcat	tatggcagat	gtttgagccc	cagagatgtc	268980
catgagcaca	gcatagagct	cagagccttc	tttattattt	gcttcacgac	agagcaaagg	269040

FIG. 6Q3

actgcagcag	gttgactgat	ataaaagttt	taccatgtct	cacagcaggc	ctttgctcaa	269100
gtttccagta	aggatattgt	atcattttctt	gcctgcagta	cttgtaaate	cacttacact	269160
gcctgctggt	gagtcatttg	tttcgtcttg	agtagcatgt	catccttggt	cctagaagat	269220
agtgagttta	gagacagtag	ccaagcaaca	gcagagcagc	ctcaaccaaa	acgattttcc	269280
attttggtgg	gatgaattga	aacacaagca	tcttctatcc	aggggagatt	tggggatcat	269340
aaagaatcaa	tctgagctgg	taccaccata	ttggctgctg	cattttctag	agttgccgta	269400
actagtctca	caagctggga	ggctttacac	aacagacatg	tattgtctca	tagttctgga	269460
tgctagaaat	ctggaatcaa	ggctccaggg	gagaagctgc	tccatggttt	tctcttagct	269520
tctggtggtg	ccagcaatcc	ctgggtgttc	ttggcccgcg	ggcggatcac	tcccatctct	269580
gcctccattg	tcacacggca	ttttccpagt	ttgctctgact	ctgtgtttct	tctcataaga	269640
acatcgggtca	tattggatta	caggcccggtg	ctactccatt	atgacctcat	cttaacttaa	269700
acaattacat	ctgcagtgat	cctgtttgca	aataaggtca	cattctgagg	ttccaggaat	269760
tagaacatag	acatatcttt	tgggaacaaa	attccagtga	taacagtttc	ggagacagac	269820
tagtcctgga	gtttgtaagg	tgagccatga	ccaaggtgcc	aggattctca	ttttgtaagg	269880
tccaggaaca	aagtgatgtt	aatagaaaga	acatgtgttt	gtttgtttat	ttgtttttga	269940
gacagtctca	ctccatcacc	cacgtctgga	tcagtggtga	caatctccgc	tnnnnnnnnn	270000
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	270060
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	270120
tggtgtaaga	aggattccaa	ggccagggtt	ggtctctgga	agaaaaagca	ccatgattca	270180
tcagtaatgc	ctaccacggc	cagaggggaag	cagaaggggg	tctagaaccc	gcgcagatgg	270240
cgggttatgg	ggctggcagg	atcttcttct	tactgcgcac	acatacatat	atatacatat	270300
atatatatat	acacacacac	acatatatat	atatataaaa	tatatatttc	ttttagtaga	270360
gactgggttt	caccatgttg	cccaggctgg	tctcgaactc	ctgcgctcaa	gtgatccacc	270420
tgtcttggtg	tccctaagtg	gtgggactac	aggcacaaac	caccacgccc	agacagaagg	270480
aatatgtttc	cttccagttc	cacttgactg	gctgcttccc	tagataacaa	cagaggatgt	270540
ctgttgagct	tctcattgct	ggggagtcta	aactggaata	aaacacccac	tatctccatc	270600
aggcttgcac	tagagccacg	ctctagctgg	agagaaagaa	gctaaccocg	acagacacag	270660
gactgtaggc	agggagcatc	cgggggtatt	tgggtcctgg	ctctgatgtg	cctaaggcca	270720
acttctctct	ggccatgctg	gcgtgcatga	gctcactaat	cttccctttt	gccttccatt	270780
ttctccaatc	ctgacttagc	aaagggttgg	caaaagagac	tctgtgtgag	ttcgagcaaa	270840
gcctgagatg	ctggattttc	caagatacga	gaaggggctg	ggggctgggt	gaactgggtg	270900
tggaggaggg	aaggattaat	ttcccaagga	ggggaagggg	ccaggacatc	aggccccggg	270960
gactttgaag	agagggctgt	gggtaggagg	tagatcaagt	ggagtgcacac	aaaggtcagg	271020
aaagaggaag	tgtccacact	gtccttcgac	agacttgagt	ctatgggact	tctccctgct	271080
acggtacaag	gaaatgagta	agtgcagata	tggtgttaact	tctggccctc	tgacattgca	271140
ctgccccgat	gtcacagttg	gaaactgtac	ctgcccccat	ccttgtctgg	ggtgtgtttg	271200
gtctggggag	ggctgggtgaa	gcaagaggta	ctcagaaaaa	ggacagaaat	tgcttccctat	271260
tatctgggca	tttggagggtg	aaggggtcac	agctctggca	aagatggggg	tgaaagggcc	271320
cggactccag	ggaggggcag	ctctgcatgg	cctgattcct	gcaccccaoc	tttgcccccct	271380
cacacctcct	ctcatctccc	gtttttgaag	aggaggaccc	tgtcacatct	ggacaattct	271440
gcaagaactc	tgtagaactg	acttcactgt	gaaccaggct	ccagaagtca	acagaaacaa	271500
aatgctcac	atttaatcac	gatgctccct	ggcatacaca	gaagactctg	aaaacttctg	271560
aatttgggaa	atcctttggc	accttggggc	acattgggaa	cataagccat	cagtgtctgt	271620
gtgtgtgtgt	gtgcgcgcac	acgcgcaggt	gtgtgcatct	tctaccatgc	ctctacacaa	271680
tttgacctgg	gcccaggggc	atgttcgggtg	gtttttaaga	accgaggctc	ccagaaggag	271740
tattggggcag	ctagagtggc	cccaggatct	atatcaaact	ctacctgttt	ctgaacacaa	271800
tttcttctag	aatttttatc	cataaatctg	aattatgggtg	tcagactcct	agcatacact	271860
aaaggaactc	tctgccttgc	attaaataac	aggagtacc	cctggaggta	actcctagcc	271920
ctggctcttt	agagaacaga	tgccgaatag	gcattagggg	atgtgatgga	tgtgctaact	271980
ttcaaaaaaa	aaaaaaaaaa	aaggcctgag	ctgagtgtct	agagattcac	aaaaagctga	272040
cagcatctct	ctgttccatt	ggaagctggg	tgatcctttc	tactccttcc	tgagaaaggc	272100
agttgggcag	gaaaaagctg	tatctctgtc	ctcactgaga	gggtttccca	gtctgagggg	272160
gaaggatcag	gagagggaga	cctgacgggt	cgatgtgggg	catcatccac	ttgagtgaga	272220
accagaggga	tcccgtcatt	gcccagggca	gatgtctcat	tttggggggc	atcattcatt	272280
ctttcctgtg	ctccctgcatt	tcctctggct	ctgcccagg	agaggtggcc	gctggcaaga	272340
gagcttggtg	gaggtgggag	gtgggagggtg	gggtgtgtat	caactctggt	ctaacagagg	272400
acacatattt	ttcaagctga	atattcacat	aagactttaa	agatataaaa	acacatgata	272460
atatgataac	atgatgatat	aattttatttt	taccaagatt	caggtcctat	ggtagggtgct	272520
ttatgtgtgg	gatctactta	cctnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	272580
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	272640
nnnagagttc	ttgagccagg	acctagcgca	tagtctccag	cctgctgatg	gctgtctggc	272700
atgcttcaaa	ggggagagga	tcctagatgt	gggaaacatt	ggtgggctgt	ctgctgtggg	272760
atctgtagcc	tctgagaagg	ctaccagtct	ctcctaagct	tacgccgtca	caccctgggc	272820
acttggtgaa	tgactttact	tagcttacag	cctctggttc	ctgttgggaa	acttagggct	272880
tgccacagtg	ttcattttcc	tttgccgggca	actccgttcc	tggcacttat	catattaccc	272940

FIG. 6R3

actgtactcc	ccgcttagag	ctgtgtcaag	gttctgagaa	tctatccctt	ggcttggaag	273000
gggtcatctc	tctggccaga	tcatcttctg	ataggtcctg	aggcaccaca	acacatagga	273060
ggcttgctct	ctctctgggg	ttcactgcct	tgctccttct	ccaggccaat	atgtgacctt	273120
ggaccgggtg	cttgagtccc	ctggtcattc	agaaacaatt	gggtttccct	ggctttggag	273180
cctggcagcc	tggttttgag	aaocgggctt	taacttgtca	catgactatg	gccaaagtcc	273240
tggggctctc	caagcttcac	ttcctctgta	aaaagggcaa	taatataata	cctgtcttat	273300
tgggttttgt	ccatgttaga	tgagacattg	ggtacaaaagc	acttggtccc	gtgcctggca	273360
catttactgc	acttaatgta	tgatagtttt	cttattatct	taataaacia	tatggctttg	273420
ggagtatagt	tctgccacat	tgcagtggcc	agagtgaagg	tggtgagtgc	cttctggggc	273480
cctgggagtc	aaggttatcc	gcatgccctt	tcttgcttgc	tcctcagtgt	ggctggctct	273540
atgtccacac	catgcagatg	caacaggtag	tttgaacctc	tgaggcccac	agtgccgatg	273600
ggaggcaggg	acatcactta	tggggtggga	agtcacccat	tccccaggaa	atggccccag	273660
ctgccttttc	catgactcct	cttgaaaccc	tgtggaggcc	acattcgtgt	tggggcggtc	273720
tttcccatga	ggatatgttc	agatgccgag	gcattttgaa	aagccctcca	tagagtttcc	273780
tttcataaga	catgatcaco	cccttgggct	tctgggtttt	tttctttcag	gaccttattt	273840
tcaggcaagt	ggcctttgac	ctctaaggct	gtcctttcct	agctaccgaa	tccagcattc	273900
aaagtgatgg	aaatatgtat	atatagtaat	agtaaaatat	cagcacttaa	tggcctgata	273960
agaatgtcac	tgcaatgctg	agtttgacc	aacatttgcc	tgctcctgcc	attgagcccg	274020
ggctccctc	cagagctgag	ctgctgcaag	ggatctgagt	aactagggct	gtgtcagagt	274080
ggcgatgaca	gccaccacat	gctaaggaag	agatccccaa	ggacaaggag	aatcccacgt	274140
ggagctactt	cgtcttttgt	cttcttttgt	tttcttttgt	cacaaccttc	taaaacacaa	274200
tctctcaacc	tctattgtta	gcttgcaatt	ttcaatcatg	agcacagctt	tacctggctc	274260
catgctttga	ttgactctac	ctgccaacac	tgcaacaaca	gggaaaggga	caccggcctc	274320
ataccattag	atgggtgtgt	gcctgggcat	gaggataatt	aaaaactccc	aaggggattt	274380
taacatgtaa	cacagtttgg	aaaccattga	tgtaaatctt	tcttactcaa	catgtgctcc	274440
aaggagctgt	tgtatcagct	tatcagaaat	gtagatcagg	ccgcacttgg	acctgtagaa	274500
tcagaatctg	cattttatca	gattccgaca	ttatttgtat	gaacattagc	ttttgagaag	274560
tgttgcttta	agagactaag	ggggtcaatc	tacctactt	tgacgctctg	tgttccctag	274620
tcattggcta	aaatatcagc	ccccctgcaa	tgagccatcc	tccttctgtat	agtcagtgat	274680
ggcctgtgaa	ccttttagcca	actggaagtg	ggaggggaca	cagtccacaa	aacactatcc	274740
tgacttttga	caccaactac	aagtcaaggg	gttccccaaa	ccaccttgag	ttgtgataat	274800
tcgctgggag	atctgacaga	actcactgaa	ggttgttata	ctcatggttg	tgatctctta	274860
tagggaggga	atcacagatta	aaatcagcca	aagggaagaag	cacacagcac	agagtccagg	274920
acagtgcctg	acatggagcc	cctacgggtc	tctcccggtg	agtcacggac	agcgccactc	274980
tcctggcatt	gatgtgtgac	aacacacagg	gagtgttccc	caccagggaa	gccttgggtg	275040
ccagggtctt	tactgtggct	ctgtcacatg	agcacagctg	actgcccatt	cggccgatct	275100
gttcccagag	tctccaccgc	tacacatcac	tcacagtccc	tgctctaaat	cacacaccat	275160
gacccaatgt	ccccgggcaa	atgaaaacac	ctctagcagg	caggacgttc	caaagcctta	275220
gagatcacct	ctcagaagct	gagggcagaa	gcacagacct	tttttgggca	gggttaaatt	275280
ctttattact	gtttttgaaa	aaactcccaa	attgagtttt	tcctcttcac	ttacagcagc	275340
ataacaacaa	tcataaatgc	agaagacttc	tgcgagcaaa	ggtgtggggg	aaaaccccaa	275400
gcagtggaca	ctagctgggtg	tcctccaatt	tgattctgat	gctgtctact	gggagatagt	275460
gtcagatcct	caagcctaaa	ccctccttct	ccactgcaga	gggctggcct	ttggaaacttc	275520
tgaccaatct	acttcaagtt	gaggttccaa	ccactcogct	ctttgggttt	ggttgattttg	275580
ctagagtggc	tcacagaact	cagggaaaca	cagctaccag	tttattgcga	aggacatttt	275640
aaaggataaa	agtaggcaga	taaagagatg	catagggcga	ggtgtggaaa	ggtccctagt	275700
gcaggagctt	ctgtccatgt	ggagcggggg	tgaccacccc	tctcagtaca	tgaatgagtt	275760
ctccttcacc	tgccatcag	cctctacatg	ttcagctccc	caaccagctc	ctcttgggtt	275820
tttatggaag	cttcaagaca	cccacattct	ttccccagag	tataggggcaa	gaccttctct	275880
ggggagggtt	ttaagaccca	cagtcagaaa	ggtgggggtg	ggtcaagatt	agagtccctg	275940
cttgacgggc	aggtgaaagg	ggtaggggga	gtaggtgaga	aaaattctgt	ttattttttc	276000
tttttttttt	tgagacggag	tttactctt	gttgccagg	gtggagtgc	atggcacaat	276060
ctcagctcac	tgcaacctcc	gcctcccagg	tttaagcgat	tctcctgcct	cagcctcccg	276120
agtagctggg	attacaggcg	tgtgccacca	tgccctggcta	attttgtatt	tttaatatag	276180
acagggttct	tccatgtttg	tcaggctggg	ctcaaactcc	tgacctcagg	tgatccactt	276240
gcctcagcct	cccaaagtgc	tgggatcaga	ggtgtgagcc	actgcactgt	gccaaaagat	276300
tctgtttttg	aggcctgcct	ctgaggtcta	acacactcaa	cattataaca	agactgtagt	276360
aagggtctatg	ggagttaatga	gccagggaact	gtggatgaaa	acctatcaca	gatatgcata	276420
tatatatata	tatatatata	tgcatatcta	taataactcc	acaactacac	actgccttat	276480
tgctcagttc	ttctctccat	gtctctgacc	caccttgcgc	cccttccctcc	atccttttct	276540
ccattgcata	cccatccact	gtgccctttg	gaatgctcac	accatgaact	gcaaactctc	276600
gtgtggcttc	agcctcttct	ctgaaagtcc	ctctcaccta	ttactttctc	tggaaacctgc	276660
catccctgcc	acctttctcaa	aaaaggcctt	ttattctctt	cattccacaa	agctcagtgt	276720
caaaacatgg	ggtttacact	ggaagctgag	gtcacatcag	tagccgggat	cagggtcgcc	276780
ctagctgccc	aatgcagctc	ccaggcctcc	tgtaaaacct	tgacctttga	ggtcatgaca	276840

FIG. 6S3

```

gccctctcct gctatgctca tagctgacca ctgaactcct ggacactccc tcccccaagt 276900
tcacagagaa tgtgggcaca tgcccttacag tcttcccttg atccaaacta ctgccttcac 276960
cttgagtgcac agcagcatct tttggatgtc ttggcctgtc tagctttatt tttttgtgtt 277020
ctgccatcaa gtttgcatct ctggtgcatc cgtgcctgtc agcgcagtgc aggcgtgtgt 277080
gaaatcccac gaactcaggg atcacactga cgggtctga gtcctgtctc agttgtgagc 277140
tagttgtgca atgaagggaagg gacactac actttccaag cctcaattca ctcatctatg 277200
gcatgggtgac aataatggag gttgatttaa agtcctttgt aagaattaag agttataata 277260
gacataaagt gctgtatctg gtatacctag aaaacattcc ataaaagtta gtaattgttg 277320
gtcatgtaat gatgactctc taggctagga tttcagcttc attgcatgca catggtgcac 277380
tcacagggcg tgacctctct ctgtctcagt aacctcatct gaggaccggg ataatacatc 277440
cgcttcaaag ggatgtcata aagattaaat aatatgtgta aggcgtgttg catttagctg 277500
cattcaacaa atatttctgt atctttctcc tcatttctcc ttactttctt gcttattatc 277560
tgctctaggt atagatttca gagaactaag cttgtttaca tccttcataa aataaccagg 277620
ttgggttaggg catttccaag agtcaatact gtttagtgac tattctctgt ttaatctatt 277680
ttgattgtcc agggctcatct tttgctatgt catagggtgt tggcttcttc tagagaagtg 277740
agacgtatga caagttccaa gtgagtggag cgaactgtca ggatattccg ctgaaaaact 277800
catgtcagtt ctaattcgtg attgtaattc aatcacagcc tgagaacagt aggactgtag 277860
ttcaaatgct ctgttccctt ttttttttcc cagaggataa tttttttttt tctttgagat 277920
ggagtcttgc tctgtcacta ggctggagtg cagtggcgtg atctcggctc actgcaacct 277980
ccgctcctg ggttcaagca attctcctgc ctacgcctcc caagtagctg ggactacagg 278040
cacatgccac cagcccaga taattttcgt attttttaga gagacggggt tctcccttgt 278100
tggccagggt ggtcttgatc tcttgacctc atgactcgcc cacctcgccc tccccaaagt 278160
ctgggattac aggcgtgagc caccgcgccc ggcctctaga ggataatttt taaatgtgct 278220
tttgcatttg gaaaatgtga ttggcatttt tttctaattt tctaataatga tacgctgtcg 278280
gatgctatgg attacttaaa cctctctggc acctagaaag atctttaagt gggtctcaac 278340
aagcttcata cgcaatgtaa attgtattat ctctcaggat gtgtgagaac atctgttttt 278400
cttctaattg agtaacata taagggctct ttgggatatc ttttaaatag acttaataca 278460
acattcagga atgataacaa aatataatca cagttgttaag ggaatgtgag catttcatat 278520
taataacatt ggaaccttat gtttaataca gtgttaaaag ttgacaaaca tgtaggagtc 278580
agaaaattca attaaaatta tcacagtaat atgaatttag ccacatcctg tgttagtatt 278640
gaaatccatt taacaccaca aacagtaata ttttttagcc gtttattcaa aaggaaaaca 278700
ggaactaaac cactttcatg caatatatac tctgttaagt tggtcaggct aatttttgtg 278760
ggggaaggaa ctttaacttt gaatatttga atgcccagtc atttaactctg aatatcctat 278820
ttccttgcat gttgcaaaat ttttgtcaat aaaaggcaga aaaagaaatc tcttctccat 278880
gctcatccct aagagaatgg gttgtctgta ccctgagagc attttatgga ggggacaacc 278940
acttttctaa ttttcttccc cacttctctg tgggcacaaa tgctcttttg ttgaaagagt 279000
tgtaattcag tcccaagatg aggtgtgggt actgcatccc taacctatat ctggggaccc 279060
cacagccaca cacatggggg aaatggagct tgtcattcag ttctccagcc attgcacagg 279120
gttcatggac tcttcgttga tcccacccca ctctgtctagc cctgtgctagc cgaacacact 279180
tctctcttct ttatcaggag gccataggag aagggcattc atttttaata cacatacatc 279240
tgcatcaagt ctaattttgc catgtctcaa tccaactgtc aaatgggttg tttgggggct 279300
atgggtgctta tcaaacattt actcaagaat agccaaaatt agccaagcaa ggagaacttc 279360
agcaacgttc ccaaatggcc ccaaccaagt actgtaagac tgaggatagc taaagggtct 279420
tgagagggag ttctcaggca gtggcccaga ctttaactctg tttttttaag tgagaaatct 279480
gagtaaccatt cttagctcct cttccttacc cccaaacctc cactaagcct tgtgctacta 279540
tttgnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn 279600
nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnnnnnnnn nnnntctgga acatacccca 279660
gctgctctcc ctgtctctgt gctggtctct caatccatgc tccacactgc agccagagtg 279720
ctctacaatg caaatccatt tgtgagactc ctctcttaa aatcctcaag tggcttctct 279780
ttgccccag gatcattttg aaactcctta atggaagagg catggccctt tgggatgttg 279840
ttcccccaacc cctccacat catcttttca atcagatttc ccactaaatg gaaatttttt 279900
caggtcctca actttatggg gactttctct tgetcaggat ctttgaacat actgtttctt 279960
ctttcttttt gtatttgcca agacaacact tctctggta agattttctt gatcctctct 280020
ataaaaaaag attgagatag ttgactaccc aaaatgtttc ccattcatte caagctctat 280080
tcaaggcagt aaagtgcctg gctgacagat tgcattcctc atcttttctg aagctagcaa 280140
tggccatgca acagcattct ggccaataag atagaagtcg aagttgaagg gtgggatttc 280200
caagaaagct cgttgaagac ataattcctc atttcaactt ttactctttc tctttcctgc 280260
ttcctaaaat gcggtgcaga tggcagacac ttcaaagctg tctcaggcaa tcaggtgatg 280320
ttaaggcaga aaccagcttt atgatgggtg gaacaggaag aaagaaggca cctatgttct 280380
tgttcacctt gaaccacacc agcactgcct tgcctacccc tggaaattcct ttaatgagag 280440
gcaaatgaga gcttacgtgt ttaagccatt gctattttat ttttttttgt ttatatgcaa 280500
aagaacttaa tctaacactg tattaacact aactgggtct attgcttggt accaagccaa 280560
tgcatgacac atggtatata tgctcagtaa gtatttgttg aatgagttag gcaatgaaag 280620
aacatagagg atatatataa cagtcctcct gcccagatgt catctgatcc tctttaggat 280680
ctgggcccac aaaactgtat ctgatatagt ttgaatattt gttccctaca aatctcatgt 280740

```

FIG. 6T3

tgacatttta	tccctaatat	tggaggcagg	gcctagtagg	aggtgttttg	gtcatagtga	280800
taaattggctt	ggtgcocttc	tcacagtaac	gagttagttt	ttattctagt	ggttcctgca	280860
agaactgatt	gttaaaagag	cttggaacct	tccacccctc	tctcactctt	gcttcctctc	280920
tctcaccttg	taatctctac	aagctcttca	cctccccctc	tccttttgcc	ataagtggaa	280980
gatttctgag	gcctcaccag	aagcagatgt	tggttccatg	cttcttgtag	agcctgcaga	281040
accatgagcc	aaatcaactt	cttttcttta	taattatcca	gtctcaggta	ttcctttata	281100
gcaacacaaa	tggactaaga	cagtttctaa	tgctatgggt	ccttttagtag	gtcagtgtaa	281160
aaccctggat	cactcctgta	acaaattact	tggaaactct	ctcaccatac	atatttaaaa	281220
atagttgcca	tgttgaaaat	cctataagat	catattttat	ttcaaatacca	acaactcatt	281280
gctaaggaga	tacaagaagc	agaaaataca	gagagactaa	tgtgttgatg	atttttgtga	281340
gggacataag	gtctgtgtct	agattcattt	ttttgcatgt	ggatgtccag	ttgttccagc	281400
accatttggt	gaaaagacta	tctttgctcc	actgtattgc	tttttctcct	ttgtcataga	281460
tatctgggtca	ccttacctta	gagtcacaga	tgaatgggtc	tattacttaa	ctactgaaaa	281520
tacaggccaa	agcaaacaga	ggaataaggg	atatataata	aagtatttgt	gtacttgact	281580
tggctctaaa	ggaagcattg	cgtgtctgtg	taaaaagaat	gggtgagagt	tttccaccat	281640
tcaatatttc	taatctttct	gaaatacaaa	cctcgaacat	cctctaatac	atacattcca	281700
tagtttggtt	aatataaatt	cctttattaa	atccttatta	aataaagtta	tttatgtttc	281760
tatgaaactc	atttttaactc	ctaagtgaat	aatactactg	agctaactaa	acatcaaaca	281820
tttttaattt	tttaaatattt	tttagagaca	gggtcttgct	atggtgcccc	ggctggcttt	281880
gaactcctgt	gctcaagcga	tccctcaaac	tcagcctccc	gagtagctgg	gactacaggt	281940
gcatgccact	gtgctcagct	aaacattttt	ttgaaatgct	cttttaaaat	caattttatt	282000
gaagtataag	ttacatacca	taaaagtact	catttttgagt	gtacagattg	acaagttctg	282060
acaaatgtga	acaaccatgt	aaccatcacc	aaaaataaag	atatgagaca	tttccattac	282120
cccaaaaagt	tcccggtgtcc	ctctccagtc	aatatccagc	cctagcccca	gtccagggca	282180
accaccaatc	tgctttctgt	tgcataaaat	tgtacttatt	ttttctagt	tttcatacaa	282240
atggaatcat	acagcattta	ctcttttggtg	tctgtcttct	tctgtctcagt	gtaatgtttt	282300
tgagattcat	ctatgttctg	tgcctcagta	gtttgttctt	tttattactg	gataattcca	282360
ttataagaat	ataccacaat	ttgttttatcc	atttactgcc	tgatgggcat	ttgggtgttt	282420
ccagctttga	actattttga	atcctaaaag	actgccagtt	ttgaatgaga	ccccagaaca	282480
atgaatgtag	gctctgtata	caagttcagg	ctgctgggca	acttaggcct	taagacacaa	282540
ctctgccact	taggccttaa	gacacaactg	acatgatggg	gcttaaagt	gctgtgatgg	282600
aaaaggaggc	tgtttgagc	ctttggagtg	cttttatagg	tgaaccccag	catagcacct	282660
aatgatttgg	agcaaagctg	tgtcattccc	caaagataaac	tattcgccct	ttgagaaaca	282720
tcttctagct	actatcaata	ataaacacag	aatgcattcac	catggggccac	cgtgttgtct	282780
tttgacctga	gtttccattg	tgaacaagag	tcatttgatc	caaggcagaa	agttgggtgc	282840
acacagcagt	gttccatcat	caaatggaat	atgagattgg	gcccaagtag	gtcctgcaga	282900
cacaaataag	ttgcaagagc	aagtagtaca	ggcgcttggc	ctggccagta	ctgttgccaa	282960
gttgactgct	tcccctcagt	ctgcattctgt	ggcttcattg	ggagtcttct	atgaccactt	283020
gatggaggaa	aaaacaaatt	ggagcatagt	ttatagtgtc	ggtactacct	aaagtggcta	283080
gctgaggcac	tacatctcca	ctctgggggtg	cccgtgaagg	acagtgccaa	aggaaaacc	283140
cctcagtgag	cagaacttgg	agcaatacaa	gtgggtgttc	attttaccta	gaagagaaga	283200
tgtccgtgag	ttacagatct	acacaaaatc	acagagagtg	gttaatcggt	tagtctgatg	283260
gtcaggagag	tccaagagac	atgattagaa	aactgggtgac	aaggagtcc	ggggaagagg	283320
catatggata	cctctgagaa	cacacaaaac	atgagaatat	gtatcccata	tgaatgttaa	283380
ccaaagagca	gccacaacag	aagaggattt	taaaatcagc	tgaataagat	gattcattct	283440
gacagcatca	gctagtctct	ttccccagcc	actgttgccc	agtgggctta	catatatcat	283500
ggccatgggg	gcagggctat	gtatggacac	agcaacatga	atttccactc	atcaaggcca	283560
atttggctcc	agccattgct	gagtgtctcag	cctgccaaaga	tagaaaatcta	cgccaatatg	283620
gcaccattcc	ctgggctaga	gtggaagggt	gtggaagggt	gattacattg	gaccatttcc	283680
atcatggaag	gggagtgct	ttgtcttccc	ttggaatagac	atttactctg	gatatggatg	283740
tgccttccct	gactactaca	atgctctgccc	aaacctacca	tccatgggct	taatttttatt	283800
tggtataaaa	tttcaaccac	cattgcttct	gaccaaggaa	gtaatcttac	agcaaaggaa	283860
gtacagatat	gagcttctga	tcattgggctt	cactggcctc	acagtgaagc	aggtggccag	283920
attagaacag	tggaaatggat	ttttaaaggct	cagttacagc	accagctggg	tagcaacacc	283980
ctgctggcct	gggggttatgt	cctgcaggat	gctttaagtc	agtgaaccaat	atatgatgct	284040
atctctccca	ttgtcaggat	tcattgggtcc	aagaatcatg	gggtcaaaaat	gggagtggtc	284100
tttctcacta	tcaccctggg	gttcgggtag	taatttttcc	ttcccattcc	tgtaactttg	284160
ggctctgcta	ttgcagaaat	cttagctcct	gtggggggaa	tgcctccatc	agggaaataca	284220
atgggtgggtc	cactaaactg	acagctgagt	ttgccatctc	ctcgtgccag	tgaatacaca	284280
agcaaggaga	gggggttccct	tctcacctag	ggtgactgat	cctaattacc	aaggagaaat	284340
tggactggca	cttcacaatg	agggtaggga	gtatgtactc	tatgtgtctg	tgattaatgt	284400
caatagaaaag	tgacaccaac	ctagtacaca	gaggactgat	catgggtccag	gcccttcagg	284460
aatgaagatt	tgagtcacca	ggcaagggaac	ttggactcac	tgaggagggc	atattccaag	284520
gagaatattt	tatctatgtc	catctatgtc	catctatatt	cctctgtgtg	tccccttgga	284580
attcctattc	atgaacatgg	ggaattccaa	ggggaatata	gaatgagtag	tggaaaggtag	284640

FIG. 6U3

ttataaatgt	aagtcaaaaa	ccacacaacc	aattttgagaa	atgaggaagg	taatagtgtt	284700
gaatatgtct	tctttatctt	gatataaatg	tattttgtgca	tatatataacc	agtttattta	284760
tttattatta	tttttttgaga	tgagctctcg	ccagtgtgcc	caggctgggc	ttgaactcct	284820
gggctcaact	gattctacca	tttagtcctc	cgagttagctg	ggactacagg	catgcaccac	284880
catacccagc	tgaccagttt	tttctctatc	ctctacttaa	tttctctact	atacaacata	284940
atatgtgtta	atggtagtta	actttatatc	tcagtattaa	gtcacaagat	atcaaaaagg	285000
gaatgcgact	tagttacaag	cagaatgaat	atcactcaaa	gatgaataaaa	gagaagaggg	285060
ttagtgcatt	ttctgttgga	tgagagaaa	tttcatttgtt	aggcagaagc	atgattttgc	285120
cttttttttt	tttttccaag	gtctcactct	gtggcccagg	ctgcagtgca	gtggtgcgat	285180
cttggctcac	tacaacctct	gcctcccggg	ttcaagtgat	tctccagcct	cagcctccag	285240
agtagctggg	attataggtg	cgccagggtta	atttttgtat	tttttagtaga	gaagggtgtt	285300
ctccatgttg	gccaggctgg	tcttgaactc	ctggcctcaa	gtgacccacc	tgctttgacc	285360
tcccaaagtg	ctaggattac	agggtgtgagc	cactgtgcac	agtcaccacg	gtcttttttg	285420
gaggcaactt	tagcatgggt	aagagggtgcg	aatggatgtt	aagctaacac	caggtaagcc	285480
ctggtagatg	gttattgtgt	cagtgggcct	acgctggagc	catgtttccc	caaatgccct	285540
tttcttatgt	acctctggat	tagtgtgggc	cactggagac	atttcacatg	agatgaggaa	285600
ggtgggagtg	aaggagcagc	atcttttttac	actaagcagg	tgggggaggg	catgtggctc	285660
tgtctcacat	tggtgggaat	ctgtccatca	tctggttggc	ttaggtcagt	gggtgagttc	285720
acagctgttc	cagcttctgc	tggaaactcc	ttcggtttct	ctgactgctc	cgtgatgagg	285780
gcatcagatt	ctcctgcaga	aagccccagt	gttgaagttg	gggcttcatg	ttggtgagtg	285840
atagttacgg	gttctagccc	aacctgtggt	ttcttgcata	tttcagtgtc	agctcagttc	285900
tgcggttttt	gggttgtcct	tgtctccac	acttcatgcc	tttctttccc	tcttgacagt	285960
ctgcccttta	gatttttagga	ttcagcacca	gccacagaaa	cagcaacctc	actgttaagg	286020
gttgaattgt	atctccccaa	aaggttaggtt	gaggccctac	ctgccaggac	ttcagaatgt	286080
aacctcatct	gggaatagca	tcaattgcaa	tataattaat	taagatgagg	gcatactggc	286140
tcaggatggg	ctcctaattc	aatacaacta	atgtccttct	atgacagcca	caggaagaca	286200
gaaacgccaa	gggagaacac	catatgctga	tggaggcagt	ggcagctgcc	agccaaggat	286260
tataaccaga	agtcaggaaa	aagcaagaag	gaatcctccc	ttagtgatth	tacagggagc	286320
atagccctgc	tgacaccttg	attttggact	tttattcccc	aaaactgtaa	aacaatacac	286380
ttctgttggt	ttaagccact	cagtttgtgc	tactttgtta	tggcaactcc	agaaaaacaaa	286440
aatacactca	gactgtttta	tcaacctcca	taattgcata	aggtctaata	cctataataa	286500
atcccttaaa	aatgtctgtg	tatatatat	taaaaatata	aaatatcttc	tagtggttct	286560
gcatctctgg	tcaatccctg	actgatacag	aatatgtatt	ttcattttcta	atgatgaaat	286620
acctgaatga	aattttctagg	acatatggta	agtgtatgtt	tagcttttta	gaaactgcca	286680
acttggggga	attgcttgag	gccaggagtt	caaacagcct	gggtaacagt	gataccctgt	286740
ctgtacaaaa	taaaaaatat	tagcagcgtg	tgggtggtgtg	tgtctgtagt	cccagctact	286800
caggaggctg	agggtgggaga	ttcacctgag	cccagatcct	tgaagttata	gtgagctatg	286860
atcacgccac	acagatctag	cctgggtgag	agagtgtgaa	agctgggtctc	taaaaaacaaa	286920
acaaacaaaa	aagaaactgt	caaactcttc	ccaacatgtt	gccattttta	cattttaccat	286980
tttacattct	taccagcaat	gattgatagt	tccagttgct	ccataccctt	gctgaccatt	287040
ccaatagatg	tattgtgtta	tctcattgta	gttctaattt	gtatttccct	agtgattaat	287100
gatgtttaac	atcttttcat	gcacctattg	gctatatgta	tatcttcttt	agcaaaaatat	287160
atgttgttat	ttgaagagcg	gaagttttac	atttttagta	agtctaattt	attgattttt	287220
tttttcttag	atggctcatg	cttttttgtt	tatctaaaaa	aaattttgct	tcttcatggt	287280
cacaaagact	ttctctctatg	ttttcttttg	gaagctttat	attttttagtt	tttatgttta	287340
tgtttaagac	ccatttcttag	ttacaatttg	tgtgattttt	tggaggggtc	aagggttcatt	287400
ttctttttcca	taagaatgta	cagttgttct	agcacccttg	ttaaaaagac	tttctcttcc	287460
ccattgaact	actttgtcaa	aaatcaactg	agcatatatg	ggcatcatga	attttaatatc	287520
tgttagaact	gaatgttccc	aaggcaggcc	atgcccatag	ctgacctcct	ttccttggat	287580
tgccacacaa	ctaaagtaag	ctaagtctgg	agcaaaagaa	tccatgtcta	acctgtattt	287640
tttttttttt	tttttttagat	ggggtctcgc	tctgtcaccc	aggctggagt	gcagtggcgt	287700
gatcccagct	cactgcaatc	tctgcctcct	gggttcaagt	gattctcctg	cctcagcctc	287760
ccgaggggct	gggattgtag	gcgtgcacca	ctatgcccat	ctaatttttg	tatttttagt	287820
agagataggg	ttttgcccatt	ttggccagac	tgtcttgaac	tcttgacctc	aggtgatctg	287880
cctgcctcgg	cctcccacag	ttttgtgatt	ataggcatga	gccaccgtgc	ccggccttaa	287940
cctttgtttt	cttacacac	acactacgtg	atgttttcca	catgcatggg	tcattttgctt	288000
cattttacgta	caaatgcata	agcaatatac	tgtgtgggtg	gagttttgtga	tgggaaaagg	288060
aagaagtttt	gcggatacta	cactggcttc	ctgctatctg	tctgtgtgaa	tggctatgga	288120
ctttgtcttc	tatttgttcg	cttagcgcag	atatgatcag	cttacaactt	aagattctag	288180
agaaagaggg	tcaatctctg	aaagcactct	gagcatgtgt	gaagtttaaat	caatagcata	288240
tgaggtttaca	gcaaatccac	tatctttgtt	tcttcagcta	tagaatggca	tgaggattca	288300
tctcaatttta	gttcaattct	gttcagaaacc	atgagctagc	tgttcatgga	aggaaaagccc	288360
acctgattgt	ggccagggaa	ggagaaacaa	cactttaacc	aggttgattt	ggttctcaca	288420
gacaccattg	gcatgtgaca	tctggaacag	accatgcctg	gtctctgttc	gtatcactta	288480
ctattcagct	caatattggt	ctgaatatct	tttagactga	ctgaaatgaa	aagggaactgt	288540

FIG. 6V3

tgtgtaacca	tccataattc	cagcctgtag	acctgggctg	tatctctatg	ccctgcctgg	288600
cacagacccc	acctcctgct	ccttctccct	caccaccagt	caatccttgt	cctaataaac	288660
agggagggga	accctgaatg	gggagtggag	ggaagagatg	tcattgagatg	gcaacgtgca	288720
ccctgaagtg	aggatgaagg	ctatgtgaat	gttgtaggct	gacagccggg	catagtggcc	288780
ccgttgccat	ggcgatggag	gcatgttgat	gcgaagtgtc	tgcacagctc	ctaggatttt	288840
taacagcagc	tgggcagagc	ctcggcgtcc	ctgaattgtt	gccccctga	gtcactgctt	288900
ggccccagct	gtcctgatct	ctgttgacaa	atgggtgtcc	ttcacagtca	aactactaac	288960
agtactctaa	ttaatgaatg	tgctaattat	tcttgccctac	tcccagcata	tttgtctaac	289020
taacctgtca	cacacagatc	agtgcagcat	atgcataatt	acggagagcg	ctgggagcag	289080
gggatgggtg	ggagaggggt	gggctcgcag	cctgtcgcgt	gtgggatatt	tcttgtaaag	289140
ttacctttgc	taacggtcag	atgtcgtggg	gatattgtat	ttcccgtgaa	gtgtatatgt	289200
cttccctttct	ttccctttcta	agaatctctc	ttcagggctg	agggggccatt	gctcagtgtc	289260
ttagcctgtg	aggggattgc	caggtacaaa	tgcagaagga	ccagggagcc	cagggtctga	289320
agacgattcc	ggtagcagca	cgtaggggtga	ttaaaactcc	agactttaaa	gccagaccgg	289380
cctgggctttg	aacccttgtt	ctgctccttg	ctatgtgggt	ccttgccctg	accacatttt	289440
tttttttttt	ttaagacagg	atctcctctc	cctggcccagg	ctgtaatgca	gtgttgcat	289500
cacagctcac	tgaagcctcc	atctctacag	cctcaagcga	tcctcctgcc	tcagccccga	289560
gtagctggga	ctacaggtct	gtgccaccac	gtccagctaa	tttacttttg	tagagtgggg	289620
ggtcttgcta	tgttgcccag	gctgttctcc	aactcctgga	ctcaagccat	cctctagcct	289680
cggccttcca	aagtgtctgg	actataggcg	tgagccacgg	tgccaggccc	ttgaccacat	289740
ttttaacccc	tctgaacctc	agtttcaact	tctgggcaat	gggagggggg	taatttgcct	289800
ctcagagggt	ggcgaatgtg	ggcctctggg	aggctctggg	tacaatgccc	agtcagact	289860
aggtccccc	gacacagccg	ctcagcggct	ccggattctg	ggctgctctg	gactgcggcc	289920
aggcggctct	ctgcgggaat	ccgggcaggc	agggcgggct	gcctccccct	ccccggctct	289980
cccggtgccc	cctgtctttt	tgttctgtct	cagcagctct	ctattaagat	gaatggcatt	290040
tccaaaggct	tcacctctga	taagtgttcc	tctgcagctg	cagccagaat	cttaattgtc	290100
gcgctgtaat	ttaatggccg	tctcggctat	taacacgctc	ttctcgggtg	aagtggactc	290160
cttccatccc	cgggctctct	cacgtgctct	gcgcctgggc	tgggggtgag	tccaaggagc	290220
tcagagcggg	gtgcccggca	cctctcgcca	ggcgcttttc	gaccttctaa	agcgcgaatg	290280
gctggacttt	tctcccatgt	gtggggcccc	agaagggtgt	gggcccaga	aggtgtgggg	290340
tccttgctgt	ccacggagcc	cgggaagggt	ccagtgtatg	tgggggctga	ccacgttggt	290400
ccccgtgggt	gctgttttca	tgtgcccggca	gattgggatg	agttttaaag	acagaagcgt	290460
gtaggataga	gaaacttctt	taaaaactgg	aaattttaat	ctggggatta	taactattgg	290520
acagtcaagt	gcaagagtga	atacacttct	cactccctcc	tcccaatttt	tatttgcggg	290580
attagtcagt	ccccctctgc	cacatgataa	ttgtgagaac	taccagggtc	ttcattctcc	290640
tgccatctgg	ttgacctctc	caagaatgga	caccggggca	gcctgggcca	atgaggctgt	290700
cctaagagtt	tagatgagag	aagtcaagtct	ttgacagggt	atggaagctg	taaaatgtaa	290760
aactccacag	ttggtgaaga	tgtctccagg	aaacaggctc	gcagagagaa	tacgtttgac	290820
atgctaagag	aagctgagag	agagcagag	gcagagattg	aagaaagaca	gagacagagg	290880
tagagagaag	ggaaagagag	agagaaaagg	acagaagaga	gagaaaaaag	agggggccgg	290940
gcgcgggtgg	tcacgcctgt	aatctcagca	ccttgaggag	ccgagggcgg	cagatcacga	291000
ggtcaggaga	tcgagaccat	cccggtctaac	acgggtgaaac	ccccgtctct	actaaaaaat	291060
ataaaaaaaaa	ttagccaggc	gtggtggtgg	gtgcctgtag	tcccagctac	tgaggaggct	291120
gagacaggag	aatggcggtga	acccgggagg	cagagcttgc	agttagctga	gatcgcgcca	291180
ctgcactcca	gcttgggcaa	cagagcaaga	ctccgtctca	aaaaaaaaaa	aaaaaaagag	291240
aggaagggcg	ggagagagag	agagagaaaag	ctctctagct	ccaaggccta	accacatctc	291300
tgttcttttc	aacttcagct	gtcagatttt	tagactcttt	gagtgaataa	attctccttt	291360
ttgcttaaac	tagtttgagc	taagtttcta	ttgcttgcaa	ctggaatact	ttgtaagagg	291420
actggccttc	atttctgatg	cattgtcact	aagatgtaag	tgttagaaga	gctaacgctt	291480
tatgggggttc	aaactccttg	gctaccaaaa	ccctgaaact	ccctgaaact	taccaaactg	291540
caggatatgaa	ttggatctca	ctaagggtgaa	tatacaaatc	ttgcaagtgc	tgagccctaa	291600
ccaatcttgt	aataactctg	tggtagttaa	ttttatgtca	aattgattga	gctaaaaaat	291660
gccaggttag	ctggtaaaat	gtttttttct	gggtgtgtta	gggaggggtg	ttctgaaaga	291720
gatcagcact	ggaatcagcg	gactaagtaa	agaattccca	ccctcaccaa	tatggtgggt	291780
gtcatcaatc	cactgagggc	ctgaatagaa	caaaaagcgg	gcagaagggc	aaattccctc	291840
ttcttcttga	ctggggccat	ccatcttctc	ctgccttggg	acactggagc	cccttgctct	291900
ccagcttttg	gattcagact	gggtcttgca	ccattgccct	ccatcttctc	ctgcccttgg	291960
acactggagc	cccttgctct	ccagcttttg	gattcagact	gggtcttgca	ccattgccct	292020
ccttgatgct	caggcctttg	aatgcagact	ggtctccacc	agcagctttt	ctgagctctc	292080
agcttgacga	tggcaaacca	tgaaacttca	tggtgtccat	gagcatgtga	accaattttc	292140
attataaatc	tgcaatatat	atatatgagg	agacttattt	atatattggg	tcagttttctc	292200
tggagagcct	tggcataatat	aaagctctata	ctctacaaag	tgccctagggt	actcagggag	292260
tacccaagtg	tgtcatgacc	agcccgacag	ccctggctgc	tggcttcccc	gcacacaaact	292320
ctgcacgctg	ccttcatcag	cctttctctc	tcagctgaac	cgagggcatt	gaagcggggc	292380
tctggcactg	tacctatgag	ggagcaaatat	cttcccctac	actgacctct	tccgtgccga	292440

FIG. 6W3

gatgcagccc	tccctgctgc	cactagttac	agtgggtccat	gttccctttc	aaagtgaagt	292500
tttgataaaa	gcacctctta	accaatgcca	aatagctaag	tctggggacaa	agattgcagg	292560
tattttgcat	tttccatgta	acctcagagg	gattgccatt	cacactgatc	tgagctgcag	292620
aataccaggc	agccacctca	cccaccagc	aggtccactc	ttatactttc	tcagaaagca	292680
cagccactct	actottattc	agttgaaaag	aatttccagg	aagggtgtttc	tgcgattgcc	292740
tcagaaaagt	cagttccctt	tgggaatttc	ccttagggat	catctgtaac	tccatttctg	292800
ccttttacct	gaattctttg	gtttgggttg	aattcttttg	tttaatttat	gaattccctt	292860
tattactttt	ctctgaagaa	atggagatat	cagctgtccc	tccccactgc	catttatctc	292920
ttccttcatt	caaaccttat	gtggctgcta	cttaccgtgt	gttaagtgtt	cacttttttt	292980
cttgggaatt	aaaaaaagaa	ggacagtatt	tggggcacag	atcttttggg	gttctatata	293040
tttttttaaa	gtttcatttt	acatttgtgt	gtgcgtgtgt	gtgtgtgtgt	gagacagtct	293100
tgctctgttg	cccaggctgg	agtgcagtgg	cataatcatt	ggctcactgt	agcctcaaag	293160
tcctggggccc	aagcaatctt	cccacctcag	ccacccaaaa	tgctgggggt	acaggtttat	293220
gccactctgt	ctgacctgaa	agttttgggt	ttactttccc	ttctttctct	ttgctgaagt	293280
cagagatgat	ggcagcttcc	agattctctg	gtgcctgtgc	tgggctcgtg	ctggctcatgg	293340
tcttgggtcc	aggattcatt	ctggagactc	tcagggaagt	tcccatgac	aaggaaatgt	293400
aggagagtgt	cgtggctttg	cgtgctcctc	tgccaagccc	tgcttctcct	ggtgggacac	293460
actgaaccac	agccagggca	ttttgggtgg	tagttaaaaa	aaaaaaaaaa	aaaaaaaaaa	293520
ggaagaagaa	ggcactgtgt	aattgtgccc	gggatcttca	gaaattgtaa	tgatgaaaga	293580
gtgcaagctc	tcacttcccc	ttcctgtaca	gggcagggtg	tgcaagctga	ggcagagcag	293640
tcctctctgg	ggagcctgaa	gcaaacatga	atcaagaana	tgtaggcaat	gttgcctgtg	293700
tggccactcg	caccctcatc	agcgtgggtc	agaatggtaa	ggaaagccct	tcactcaggg	293760
aagaacagaa	ggggagattt	tctttgatgg	ttgtttggaa	gtcaggctta	aacaattgtg	293820
tctgtgtgtg	cgcattgcaca	aacactttta	ccttatcttt	attttcttct	ttttatttga	293880
atgtataggg	ttgtgtgtat	ttctgtgtaa	atttgggggt	ttcctcctct	tagtctttca	293940
cttttgtggg	gattaccagt	cccattttta	gagccagggc	tgcaacttga	aggttttgct	294000
aaaaccctca	ccgaagtgtc	tatgatcagc	attttaacta	ttaattaatg	tggccaggca	294060
aggggtggaa	ggtgagaaga	ctagaaaagg	aacatgatat	acacatttac	tcagatactg	294120
ggcttttcta	acatctgcag	tgcaattgaa	gttaccagtc	atctgcagtc	taaaaagaaa	294180
gtgatttttg	gaggtgcgta	gaaaaaatca	tcttattatt	tttctcttat	attacttttt	294240
tctttttttc	tcctgaagaa	actttttttt	ttggtgatac	cttctttttc	tctagcacgt	294300
ataatttttg	aagcattttt	catatgcagt	gtatacttca	gaaagagaga	gagagagagg	294360
aaaattgtcc	tgttcagcgt	ttgcatttcc	attattcctg	ctattagtta	aaaacaacaa	294420
caacaacaaa	aaacaagcag	gatacctaga	tctggaaaag	ggagaattgt	gtagagctgt	294480
cttcctaaag	ttctgagtta	gggctgcctc	agaccacttt	cataactatc	tccagtggct	294540
ttgtgtttta	tatttattaa	gatagagaaa	aaaagagtaa	ttactaaggg	cagctgctgt	294600
agcttttatg	tgattactga	acattgacat	gctgtcacgt	ttttggaaact	ttgagtattt	294660
aatcactttg	ggatattcta	ttttccccca	tcttgagtgt	ggacagatgc	tgggtgatga	294720
gccttcttgg	ccagagcaaa	gcctccccct	cagcctctgc	accagaaaag	ctcagcttca	294780
cacactccaa	gtatgttttc	tacaagaact	acactttgtg	gctttctgac	ccaaacattt	294840
ttatactaaa	ttacacacaa	caaagtgtga	gctcagagag	ggaacaaatg	gcttatttag	294900
gccaccattt	tcttgagcca	ttatgatttc	acacaggggt	cccttggccc	tgtaaatggg	294960
caaggattcc	attattcaac	ccgcatacat	gtacagagac	cctgctctgg	cccagatagt	295020
attcttggga	caggcggata	gagcaggaaa	caaaacagct	acagtgatgg	acaggtcagc	295080
ctgcagcaat	gcctgcagtc	tctgcaaaag	tagctgtatg	ggtggggcagg	tggctagcac	295140
ttattcagct	ctggaaggat	ctccccctct	gcctctcccc	tgacacccat	caataaaact	295200
gaggagcatc	ggtggacagg	ggaccttgtg	ccccctccct	gcctgtgcag	ttggggctga	295260
accagctac	gaagtttgag	ctcactctct	ccagctccct	ctcaattcag	agctgaactg	295320
tgggaagcct	cagagctctc	tgtttcaagg	acaggttctc	ctcacctctc	ctaattggagg	295380
tgacaccagg	aactggccct	gctctgcccc	gggctttctc	ctggactttg	ccatcatggt	295440
ctagcaaaac	ctgttcagat	tgagggtgag	gggtgagatt	cgaattcttt	ttgacagata	295500
ggattaagtc	ttcttctgtg	ggacaagtgg	gaggtagagg	taagattaaa	gatggccaaa	295560
tgtctgagtc	ctgacagcca	caatatggag	atctagactt	tttacagacc	acagggcaca	295620
ggggcctcac	taacagagtt	cccggaagtg	atgagtgtgc	tgggggcttc	ctgggttgaag	295680
agacactaga	atggaccagc	tgggagctaa	ttttttgggc	tggagtgtga	tggcctgcac	295740
atcactgcct	ctgtccctcc	attgtcacag	ctgcccctta	ggagccagct	gaggcaattt	295800
gtggctcagag	tgactttgca	cagttgtcct	gcctgtgttc	aggaagggag	tttctgtggg	295860
ccctttgaaa	ccacagaaga	gcccctcgta	tagctctcaa	tggagggggc	aaaacattca	295920
aataactcag	gagataaacac	aactatttgt	ttttaactgt	gagtttttag	gcaatcacaa	295980
agatccagat	gtatgtccaa	gcctctcttt	gcaattctaa	ttaacctcaa	tgttgcaacc	296040
atagacctac	cttcacagagt	tcaaaaaaat	atgcaaaaaa	cctgcctttc	ttcttctctc	296100
taccccaaaa	tgccattctg	aacatttctc	gttagttaaa	aaaagatttc	catggtgtta	296160
ccaggcactg	tacacagtct	gtgtcccaag	acaaggagggt	acagttccac	atgcgcccat	296220
gactgggttg	ggctctgcac	tctctctata	ctttgagagc	ctgattttct	gtgattgggc	296280
agagctggcc	cacctggtgc	aatgtcctcc	tctgcctttc	aaacatgttt	tagtcatcaa	296340

FIG. 6X3

gatcttcaaa	tttghtaacc	tttccagctt	gatccagcag	aatgcagatt	tggaaaaaca	296400
gaacgagttt	aaaatacatg	attctaagaa	acctggacca	gaactatcaa	aacttgggtt	296460
cccagagaat	atagcaaagt	ggctcattgg	ccaatactat	gacattgggt	tttgagaaaa	296520
gaaaggcctt	attgcaaggg	tggccagcaa	ggagacagga	gttggggtca	aatctgtctc	296580
cccagtttgg	ggcttagggc	aagttttaat	tacacagacg	catttcttat	gagtagcagg	296640
cagagagcct	ccaacttctt	ctgcctaggt	accagcagct	tagacatgat	gcaaacctgg	296700
gaagcacata	ctgtatttgg	agaaagtgat	tgggaagaaa	tgtgagctga	ggggaggggg	296760
tcagtgcctc	tgagctacac	ttagtgtatg	cagaggaagg	atgtcctccc	gcaggagggt	296820
gttccacatc	tgctctgggt	gtagggggag	ctggcaggca	ttagcagcgg	cctctttccc	296880
ccaagagagg	cagcctcctc	caagttttgg	cgacattatg	gccctgcaat	cataagggtt	296940
tgtgagcata	gtgctaagga	gggaaatgga	gctgctgtta	ctagtccac	cccaacacac	297000
acacacacac	tcacaagaaa	cctcacaagc	accgtattgg	aagactttgc	catccaacct	297060
gggatttgac	aggctctaga	agcagaatca	tagactcatg	aagttccccc	aaagcaggaa	297120
tcttctttac	agtaaccccc	aaccaccccc	ctccaccgct	tccaccgggt	gcttcttctc	297180
gaacactgca	gtgtttggaa	aactcacaaa	cttccaagct	tgcttcttct	attgttgcat	297240
ggattgaaag	cttgctgtgt	gtgaagaatg	gcgcttcctg	ctgtgcttag	ttttatctca	297300
tataatcttt	gcaccattta	atccttgcac	tcacccactc	atgcaactgc	ctttgcagag	297360
actggagggg	ccgctgtagg	ctgacctttc	cttcaactga	cctattttgt	tccttgcttt	297420
attccccctg	acccaggaca	ctgcctggca	caaagacagg	tctttataag	tgtatgcaag	297480
tgaataaaga	tatatatatt	attattgtta	tttttgagac	agtttctact	tgtaaccagg	297540
gctggagatg	agtacgcgaa	tctcagctga	gctcaacctc	tgcttcccag	gctcaagtga	297600
ttctcatgtc	tcagcctcct	gagtagctag	gactacaagc	atgtgccacc	acgcccagct	297660
aatttttgta	tttttagtaa	ggacagggtt	tcaccatgtt	ggccagggtg	gcctccaact	297720
cctgacctca	agtcactctc	ctgcctcgac	ctcccaaagt	gctgggatta	caggcatgaa	297780
accagcctag	aaatacatat	tattattttat	tcttggttta	cagataagca	aagtgagtca	297840
tggagaattt	ggttgaaagt	cccaagggtca	ggagtctgtg	agctgggatt	aaaacctaat	297900
catctgactt	tagagagtag	acacttgctc	catgcataat	gcctccaatt	cattcatcca	297960
agcactccct	gctcaagaag	ttctttctta	tggtgagctg	aaatctgcag	ccctatgcgt	298020
tttaccacag	agtctgtgtg	ctgttcccta	aaatcactta	gactgtgcct	gctctttctg	298080
tgtttacagt	gtcagctgta	atatccccct	cttcggccta	acgtttctga	agtcccttgc	298140
cactgggtct	cctctcctct	tcctgtgttc	tttctaagaa	cacctatgca	gataggtgtc	298200
ttctgtacag	ggaagctgtt	cctgagatcc	gggcatcgac	tctgttagaa	taatctacgt	298260
atgagtattt	tttttgagaa	ctatgtgtca	ttgctgactc	atattaactc	tgtggttaac	298320
taaaatctca	agatctcttt	atgtttgttg	agaaacttat	ttaacttctc	tgccctcccg	298380
tttccctcac	tgagcagtg	agtgattgat	aacctccacc	tgtgggttgc	gaagggtctg	298440
cacaagatga	tatagttaaa	gtagctagca	gtgcccacgt	acggcgggat	cctcacaacg	298500
gtttgcagcc	atctctctat	ctgtgtcttt	gtctctctct	cacactgggt	ttggettaet	298560
gttagcagct	agccagata	agtgtgttta	tggtctttgc	atgtattgtt	tctgtagcat	298620
actggaggat	tccaagaggt	tggggagtg	ggggcggtg	aggagtagac	aaaggcagcc	298680
aactcttcca	agtttagctt	agaagggaag	agcggtaaac	cctagttgaa	tggtggactg	298740
aagcagggtt	gtttttgttt	tgtttaaagg	ataggggaag	tctgtgcgtg	tttccaggat	298800
aaagaaaagg	agagaatatg	atattaaaga	ttctgggaagt	gggagaagga	gcaatgaaat	298860
acagacttga	agtcagtggc	atggacaggg	tcaagatcac	agtttagagga	tcgagcctta	298920
gagaaaaagga	aggggctcgg	ttctctgagc	aaggaggga	agaagagagg	cagatgcaga	298980
gaagtacggc	acatcgtgct	gctgggttga	gaaataacct	ctgactttta	ataaagtcac	299040
ccctcggtat	ccctggggga	ttagttctat	gacctccctc	ggatgccaaa	attcgtggat	299100
gctcaagtcc	ctgatataaa	atggcatagt	atttgcattt	aacctacaca	catcctocat	299160
atcctttttt	tttttttttt	tttttttttt	tttttttttt	tgagatggag	tcttgtctctg	299220
tcgcccctgg	tggagtacag	tggtctogac	ttggctcact	gcaagctccg	cctcccggtg	299280
tcattgccatt	ctcctgcctc	agcctacagg	tgctgtccac	cacgcccagc	taattttttt	299340
tttgtatttt	ttagtagaga	cagggtttca	ccatgttagc	caggatgggt	tcgacacatc	299400
ctccatatac	tttaagtaac	ctctagataa	tctctagatt	acttgttttt	tctttttttt	299460
ttttttttct	ttttgagatg	gagtttccct	cttgtcaccc	aggctggagt	gcaatgggtg	299520
aatctcagtt	cactgcaacc	tcgcctcctc	gggttcaagc	aattctcctg	tctcagcctc	299580
ctgtgtagct	aggattacag	gccctccccc	acccccaccc	cccaacaact	ggctaatttt	299640
tgtattttta	gttagatagg	ggtgtcacc	cgttggcctg	gctgggtctg	aactcctgac	299700
ctcaggtgat	ctacccgctt	cagcctccca	aagtgatggg	attataggca	tgagccactg	299760
tgtgtggcct	agattactta	taatacctga	tagaatgtaa	atgctatgta	aacagttgtt	299820
atactgtatt	gttaaaagac	agtaacaaga	aaaaaaatct	gtacatgttc	agtccagaca	299880
aatgggtttt	tggttttttt	tttttttttt	aataattttt	gtcagtggtt	gggtgactcc	299940
aggaatgcag	aacccgcaga	tatagaaggt	tgatttatgc	ttcagaggga	gggaatacca	300000
tcttgggttc	cagaaagaaa	atgatcagca	ttttctgtca	tactctggta	aaaacagatc	300060
ttttgaatgg	acaggtgtat	taaaccctgt	ggagctggct	gggcctggcg	gctcacgcct	300120
gtaatcccag	cactttggga	ggctgaggca	ggtggatcac	gaggtcagga	gttcgagacc	300180
agcctggcca	atatggtgaa	accccaactc	tactaaaaat	acaaaaatta	gccgggctg	300240

FIG. 6Y3

atgacgcgatg	cctgtagtcc	cagctactcg	ggaggctgag	gcagaagaat	cgcttgaacc	300300
ctggagggtgg	agggttgcagt	gagccgagat	cacgccactg	cactccagcc	tgggcaacag	300360
agtggagactc	cgtatctaaa	aaaaaaaaaac	aaaaacctgt	ggagctgatg	aaatcctgca	300420
gggagcttca	cgggtgacagc	aagaggagaa	acacatcccc	atatgccccg	cagagtttga	300480
agtcocggct	gcacctctcc	ccagcagcag	gttgactctg	gaaagttgca	gcgttcttac	300540
ctacagagtg	ggaacagtac	taccattg	acagagtggg	tgcaaagctc	tgtgacggaa	300600
tacatggcaa	gtgcccacca	cattgcctgg	gatgagggtg	gcccttcctt	tacgtaagag	300660
agccctacag	atacactcaa	agtgggcaca	ttcctacaga	aggagtgtta	tttgtgtaga	300720
aaagaaaaac	atgaaaggct	tttattccta	tacacaataa	agcaccctt	taatgtcttt	300780
ttgaggagga	taatatgaaa	ttgatgaaaa	ggaaccctgt	ggttggtacc	ctgacaatca	300840
catgtatccc	tttttttact	cttgaaaaag	gagtaaagga	ataaaataga	annnnnnnnn	300900
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	300960
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	301020
agattttttg	ttgtttgtgt	tttgtttttg	tttttgtttt	ttgagagagc	atctcacttg	301080
cccaggctgg	agtgcagtag	tacaatcaca	gctcactgca	gcttgtagaa	ccctaaccct	301140
cctgggctca	aatgatccct	ccacctcagc	ctcctgagta	gctgggacta	cgggtgggta	301200
ccaccatacc	cagcttctcc	ccacccccca	tcactccaatc	tatagtcaaa	ccctccagac	301260
tgtgtctcct	tggcatctat	gacacccccca	ccgccaccac	ccagtcfaat	tcctatctta	301320
ttccctctatc	ctggatctga	ttctgtctaag	ttcctgccac	actaaagaca	gggtggcttt	301380
ctgatgacaa	cattcctctg	cttaaacctg	tcagtaattc	cttgttgctc	tcagacggaa	301440
ctaagttctg	aatttcttca	cacggctctc	agcaagggtca	cagtcaccct	gctaggcccc	301500
aggggcaaat	ctcaatgggtc	atcttcttga	agacctgggtc	cagttatttc	tttctcattg	301560
aggctcacga	ccccaccttc	ttgcatgcct	caaacggccc	cttaccatgc	tcttctttcg	301620
cccatagctc	agcacacccat	atcattttta	tttatgtatt	ttgcttaatg	tggatgatct	301680
gtctcctcct	ctgctgtcct	caccagagca	tcagttcctc	aaaccaaggc	tctttgtttt	301740
gttcttggat	gcaagctaaa	tgtctggcat	gtggcaaatg	gtcatagata	catgtcattg	301800
aaagaatgat	tcatcacctc	cctctttggc	cttgtctgtg	gttctaccaa	atcccattcc	301860
ctccccagtg	ccctccattc	ccctcctctg	gctgaacatt	ctgaaccaca	gacagtctct	301920
taccctgaac	ctttgcatac	tttgttctct	tagcttagag	cggccctctc	ccctccgtct	301980
gcttggctaa	tttctacttg	ttcttcagat	tttatcttag	atgtcattcc	ctcaaggaat	302040
ccttctgtga	ctcaacatgg	aattaagttg	cctcctttga	ccctgaaagc	accatgtact	302100
caatctcatc	ttggcatgac	tcactttgct	gtgtggaaatg	tctgctttcc	ttgtttgtct	302160
attccttttag	actgtaagat	cctagaaagt	gggggcccgtg	ccttgctcat	gactgtgttt	302220
ctaaccacaa	acacagtgtt	cagctgctga	agctgctga	gtacgtttct	gctaaatgac	302280
agttgatgga	ggacattttag	ggttgctttg	aggctcaagtc	aaggaggcat	ttaacattct	302340
agtaaaacaa	ggaagtaaca	ggctcctgaa	catgcccaca	atgaaccaga	tgcaaacctt	302400
ttcccttggc	aggattcttt	gcccataaag	tggagcacga	aagcaggacc	cagaatggga	302460
ggagcttcca	gaggaccgga	acacttgctt	ttgagcgggt	ctacactgcc	aagtgagtc	302520
taaccctgat	gttgctaata	agtgggggca	tgggcagggg	ggcctccttc	taggagtgt	302580
gaccacccctt	aataccacat	gtctgtctga	gccaaagtct	tgagcgccag	ggaggtgagg	302640
aagggttggac	ttcacacagag	aggctttgtg	gacacccctt	atcatcttag	tgagtgtctag	302700
tgtcaaaaca	aagggtggtg	ggatatgggg	cacattgggtg	gagggtggtg	tgtctctctg	302760
agcttcagaa	agatctgaaa	gagtcattttg	gttagagaag	ttgacctatt	tcctgtgggg	302820
ttagaccagg	gttgctactg	tgaacaccag	ccatgactca	ccagtcacct	tcagaagcca	302880
caggcaggag	atgctgacga	cagccttcaa	ctcaccacc	ccttgctccc	ctgcgggtgg	302940
aagtctggag	gtgacaccac	tgcattttct	aacacggggg	ctccttgagc	aactggaaca	303000
agaacagaaa	gaatggggac	attagcaggt	gctttccccc	tctctcattc	ttttctttga	303060
ataaaaagggt	tgtttgaaaa	cacctgagcg	gctcctaaag	atgggtgcaa	tctattcggg	303120
atgcaaatcc	gaatgaatgt	tattcaaatg	ctcctctctt	ctttatgcag	agtgattttc	303180
aaggctcagc	cagtggcagg	catgctgggg	actatggact	acggactagg	ggcctgtcac	303240
agaggaaggc	ctcatgctag	agagctaagg	gaggagctgg	ccttcagttc	catccaggga	303300
gcaactttga	tgttcccaga	gatccttcca	aaggggggag	catggtcacc	caagaaaaat	303360
gtattcagaa	tgccaagaat	ggtgcaaaat	caggacaaag	attcacactg	cagggttggg	303420
gtccctgggc	ttgctgtctg	caccatggga	gggaggggtc	ccttcagggg	taccgttggg	303480
ttcctgtgaa	ttaaactggc	ttcaagggat	ctcgactgaa	caggcctata	tcacactcac	303540
tgatatactc	tctcttcagt	ccttctcctc	atctagggtat	ttttaattgt	ttcagtggag	303600
tgtaggcatg	aggggattgg	agggggcctc	tcctccattg	cagtttttca	ttggctgctt	303660
tgtccctca	gctccgaat	cgtcgggcca	ctctcgaaag	cattagtagc	gtagtccacag	303720
ggtgattgcc	tggccctctg	ccctctgtgg	gcattttccc	tttcagacag	cccctgagta	303780
ctcacagtgc	tgctacagtg	ggccacctag	atctccctct	ttctccatgc	tcccacgtgc	303840
tctgggctcc	actcccttct	cccaagcact	tctgtccagg	gctattccag	cagtctgacc	303900
tcaaggaaat	cctttgctaa	actgattata	gagaggtttc	tattttaaca	tttaggtctt	303960
ccatgtatta	attctcagaa	tcaatttaag	atgttttaag	gtgtgattta	agacatttta	304020
aaaccatttg	gaggagagta	cagaaattat	gtcacttgct	gtcagcctct	ttgcaccatc	304080
tgcagagaaa	gatactagag	tccgcgcctt	gacacatcca	catgcaagag	gtgcaagaaa	304140

FIG. 6Z3

gggtgtctttg	atgaggcaag	gtcaaaaactt	ctccccagac	gaaatccaaa	gaaagcattc	304200
ctactatgct	atatcagttt	ggaaagaaaa	acttctgcc	gggtgactgca	ttctcactgg	304260
tcacattgtg	ttcctatgga	ctcctcagct	caaccaattt	ggagaagtta	tggtgcaatt	304320
tcaccatata	tgggttagaag	ttaagtttcc	aatttgcctg	caatgaagaa	gaaatggagc	304380
aggccaggct	gtgtagtttc	tgccacgtgc	ccccgggagt	gaacagctct	gtttgtaaga	304440
agccatgggtg	cttagacctg	ggctcgctag	ttgccagcct	ccaaattgca	gaagtgcctt	304500
ttggttggtg	gctatgctgt	gtcacttggg	aaggctcgttt	ggaagttcca	cagtcgttgt	304560
gggggtgccag	agattaaaaa	gcgtaaagag	agagtggaaa	gtgattgttg	ctgcttgggc	304620
atccccaccg	tgtgggtgct	gcagcccagc	tctcaaaacc	catgggtctg	tacactcaac	304680
ctccatgaga	gggaaggaga	aggatgagg	aggggagaga	tagccatgga	aaggtaggaa	304740
ctaagcaggc	aggggtggaga	gttttctgta	agacaaaaac	tgtctggaca	ctgctgcggt	304800
tctgttacaa	agaccacttc	ctccctgggc	cagcaacata	tctgtgtgcc	tgtctgggtt	304860
gtaaaaagg	tcaaagatca	atgcagcagg	cagctacatg	ctggcaaaag	ccagaggcag	304920
ctggtctgtt	tgcctgtgcc	aggaaaccac	tgggaatggg	gttgtgtgtt	attctaggag	304980
aaagtcgtcc	cagcagcagc	ttctccagg	gcacccaaga	gcactgaaaa	gggttgcaag	305040
atgaccctag	aggctgcagg	aagaaaagaa	catgcattta	atcttgctat	ctgaaaagta	305100
agacatgaag	ctttcctcat	ttttaatat	cacatggaca	gtagtattgt	tatatagttt	305160
atatgcaaat	atacttgtta	taaggttgca	tgctcaaaat	ttttggttca	tggggtgtgg	305220
gatcataaat	gttttagggac	catggctatc	aaggaaaaac	agcatgaagg	ataaatgata	305280
ctggtggatt	aaaaagacag	atgcattgtat	tttttagcata	aaacacaaact	gctgactgat	305340
acagatgact	caagattctg	gggcagctgc	tgaacagata	cactagccag	tgtggctcat	305400
cggctcagac	ttggccttaa	tttaattgggt	gtccctccac	ccatctccca	tgaggtcaga	305460
gctgagccag	ggtttgagag	ctaaaaggaa	ttggacctgg	actctgttca	cgtgtatat	305520
ttaattctaa	ttaattcatt	cttttgaaa	acagagtcac	actctgttgc	ctaggctgga	305580
gtgcagtggc	acgatcttgg	ctcactgcaa	cctcggcctc	ccaggttcaa	gttattctcc	305640
tgcttcagcc	tcctgagtag	ctgggattat	aggcacatgc	ccccatgcct	gactaatttt	305700
tgtattttta	gtagagacgg	ggtttcacca	tgtcaggctg	gtcttgaact	cctgacctca	305760
ggttatccac	cgccttggc	ccctcaaaag	gttgcattta	caggtgtgag	ccaccgtgcc	305820
tggcctgttc	acatgtataa	aacacagttt	aatgtcctat	tcccagccaa	tgagcatggc	305880
tagagcagcc	ttgggtcaaag	tttgggtttt	ggagaaaaat	ccttggttagc	tgacctaaag	305940
ttcctctttg	tgagtgttaag	taagcacagg	ttgcagagag	gagaaggggtc	tctggagagg	306000
tgtaattttc	ttaaattggatt	acaagttcat	ggacttttaa	caggtgttac	aggggataac	306060
aagttcttta	tttgaggact	tttgaggacg	tttaagggtta	ttctgattct	tggttttcta	306120
agaggggaat	gtattatttta	actacagaca	ccctaccgc	ccactttttg	cagagtgtat	306180
caaaacatgt	ttttggaata	ccaccctcat	gtcgtctctc	cctgcattct	ttatctcttg	306240
gtgtccattc	tagactcact	ttctttctgt	tttttatttt	tatttttttt	tgagatggag	306300
cttcaactctg	tcaccaggct	ggagtgcagt	ggtgcaatct	tggctgactg	caacctctgc	306360
cttcggggct	taagcaattt	ttgtgcctca	gcctcctgag	tagctgggat	tacagctgc	306420
accaccatgt	cggcctaatt	tttgtatctt	tagtagagac	agggttttcac	tatgttgcc	306480
agcctgggtc	caaactcctt	acctcagggtg	atctgccgc	ctcggcctcc	cagagtgtct	306540
agattacaga	cgtgagccac	tggtgcctgg	cctagactca	ctttcaagtg	gcatagactt	306600
gtaaaattat	ttaaagggtga	taggtctava	atgatcctgt	caattagtat	tgacactatt	306660
attaataaac	tgttattaat	tatttttact	tacttttaaat	taatccaaac	taattaacgg	306720
aacactaaag	agttttctatg	ttttattccc	agaggtggag	aaaaatgaaa	gggaatatag	306780
caacgaattc	ttttctccat	aaaaacatga	atagtgtagc	acatcaagtt	gaacatacca	306840
cagcaaattg	ttgcaagatc	tgctgagtag	ctcctattta	gacctcaagg	aatgagactc	306900
aaaatgggtt	catcagttct	gttttgcaga	aaaaatagcg	caaaatttct	caaaagaaaa	306960
tccagaataa	taataatttg	tcaataggaa	agacatttcc	actgggggtt	aagaagggaag	307020
acattggaac	aatgatagcc	accacttatt	gaatgcttac	tgtgagccag	gtggcacttc	307080
accttgtttc	attctcacaa	cagtcctagg	aagtaattac	taatgtctcc	atccacctct	307140
tgtagatgag	caaactgagg	ctcattgagg	ctaggaaatg	caccacact	cacatagccc	307200
ataagaggca	gccatggcat	tgggcccaga	ccatgtgaac	ttcaaagact	acacgagcag	307260
ccactgggca	gctgtcatgg	ctaaagccac	ttgaattcag	cccagcagca	acccctctct	307320
caggaggggc	acataagctt	gcagcttttg	gtagaagctg	cacttgaagt	cctggatggc	307380
gagaggggact	ggcttgagcc	agagccagga	acaaggctct	gagaatattc	tggaatatcca	307440
caggaggaac	ccattttctt	acagctggga	gaatttcat	caactccagg	ctgacatagt	307500
tttatttagga	acgaagggtga	cttgaactaa	tagtcaggaa	tggttgaata	cggacccaat	307560
gtcaaatcac	taggcagttc	acatttctaa	tgagcaaatc	ccttagacaa	ttaagaattt	307620
ttttcctttt	gcataaccac	gacaaaatcg	ctacttaaaa	acaaaccaaa	gacccgaaac	307680
atgagaaaga	gaaggaagca	ggggaaatct	ttggtactaa	taagttttta	aacaataaga	307740
gcaccagata	ttttacccca	tcagacacag	aatgttattc	gaataaccaa	aaaaggaatt	307800
ttttctctaa	gtttcttgaa	ctggaaaaatg	atgcataatt	tctcagtcct	gaggctgcaa	307860
ttttgtgcct	ctagtaacat	ataagaatag	atgtgatgcc	agtgcctcag	agctgtgca	307920
attgttactt	ggggacctgt	ttattcacta	agcacttcac	cccagtata	aattttagtg	307980
ggcctcctgc	cctttggagc	tcctaccgtg	tccattagat	cagtggaaat	tctgggattc	308040

FIG. 6A4

agagcacttt	gcaagggtcag	caggggtctg	ctctttctgt	cctgttctctg	gtttttgggtt	308100
gtgcctggat	tccagggtag	gtttctcatc	tgttaccttc	atagacttct	ccagaaaagg	308160
atcttttgac	catcagagga	ccacgaagat	tccattgggtg	aggcgcagat	aacctgatct	308220
ctctgggttc	tctgcagggc	acagatgaag	ggctggccat	tcccaagttc	tcagtgggtac	308280
cactgaggca	tgagacccta	atggtttgca	tgagcagttt	gaaaattgca	tctttgtttt	308340
tacctatata	atcacatgaa	acccgtgggtt	ctcaaacgtc	agcaggcatc	agcatcacat	308400
ggagggcctt	ttaaaacaga	tttctggggc	ccaacacaga	gttttaaatt	ctgaaggcct	308460
gaggtgggtg	tgaacatttg	catttctaac	atgttctcga	tgctgctgcc	gcctctgggtc	308520
ccgagagcat	gcctggagaa	ctgccacctt	cgaccatgga	ctgtgagaat	tcacatggac	308580
ctcagaatta	taatcagtc	ctcagtttta	catataagga	aactaaatcc	agagagattg	308640
ttttgccaat	ggtgaacagc	tgggttaaagt	caggatggag	actttaatcc	tagtcaagtg	308700
acctttcctc	tgtattttatt	tccctccctt	tttatgcctc	tcaagtctag	ttacactggt	308760
tttcatggat	gggcatattt	attgtcctga	tctggactgc	agacttctca	ggaggacacc	308820
tatgatttaa	tttagtatag	ttgaagagtt	aacagacatg	gctttggaga	cagactgatt	308880
atggtgtgaa	tcccggcttt	gccactccct	agctggatga	ccctgagcaa	gttattcagc	308940
ttctccaagc	ctgagttcct	tattggaaac	atggagcaa	ttgtgatagg	cagaataatg	309000
gccccctcac	caatcatgcc	cacatcctaa	tcctaggaa	ctgtgaatat	gttatgttac	309060
atggcaaggg	gaaattcagg	cagctagcca	gttggcctta	aaataaagag	attatcctgg	309120
atgatctggg	taggacctga	tgtaaccaca	agggtctttt	taatgtggaa	gaaggaggca	309180
taagagtaga	tgtcagagtc	attcaaaaata	agaaagattt	gatgggccat	ccctgacttt	309240
caggttgga	ggaggttctg	agtcaaggaa	tacaggtgac	ctctagaagc	tggagaaggc	309300
aaggaaatgg	tttctccctt	agaagttcca	gaaggattgc	agccctgcta	atatcttgac	309360
tttatagccc	tttgagattt	attttggatt	tctgacatcc	tgaaccatag	taaaagggtg	309420
ttttttgttt	ttttgagaca	gagtcttgct	ctgttgccctg	ggctggagtg	cagtgggtgtg	309480
atcttggtctc	gctgcaacct	ccgcctccca	ggttcaagtg	attctcctgc	ctcagcctcc	309540
tgagtagctg	ggattacagg	tgcttgccac	cacacctggc	tattttttgt	gttttttagta	309600
gagacagggg	ttaccatgt	tggccaggct	ggtcttgaac	tcctgacctt	gtgatctgcc	309660
tgctcagcc	tcccaaatgt	ctgggattac	aaggcgtggt	gttttaagcc	actcagtttg	309720
tggccacttg	ttacagcagc	aagaggaaac	tcatacagtt	atcatgtgaa	ctcacaggaa	309780
tatggtgagt	taaaaagaga	ggaagggtgc	aaaacatcca	cggtagagtg	agaactctcc	309840
agggagttag	gactgtgccc	agcatacagt	gatcaccctc	ttagtaagct	aagtttctga	309900
gcaccagctt	ttttgagttg	actttgttgt	ctttaacatt	tgaagatcac	ccttcttttg	309960
tcagcctggc	tttcagacct	gggctgattt	gtggatctga	tagaaaagtt	tccttagttg	310020
ggctcttctc	cccgaccacc	cccatgccag	tggtgccaca	tcctctgtct	gcattgtctca	310080
ctcttcaatt	ccaagaagcg	caggggcacc	gccaggaaca	ggaaccctgc	cagaggaata	310140
catcaagaaa	ccaagtctcc	cttacgcctc	accgtaggaa	cagagttaat	ggattatgaa	310200
catgtgtttg	ctttatacca	ttgtttgttt	cccagggtgg	agctggctgc	cccatcttat	310260
tgggtagatg	taagtggaa	tacgaatggg	atttatgttt	catgcacgat	ggtgatttat	310320
aaacttcaact	tttcagacca	tttcagacca	cttatgcacta	acttgggtctc	tgattgtttt	310380
tctccttggt	tgtttattct	gcagccagaa	ctgtgtagat	gcgtacccca	ctttcctcgc	310440
tgtgctctgg	tctgcggggc	tactttgcag	ccaaggtaac	tcagacttcc	ctttgttcat	310500
tctccttcta	taaagtgcct	ctcaaggagg	ttcaaagggc	aggctttttg	ttgaaaggac	310560
tttgccctgac	ctctggctcc	catctgtgaa	gccttgagg	ggtgagagcc	ctcggggaggc	310620
ogtgtttctg	gcactgctctg	caccctgtga	gagcgcgtgt	gataatgcat	tgctaattgt	310680
tgctccctgg	tggctggctg	agagctgctg	tgctgacaag	ggtgggttaa	ggctaaatgt	310740
gactcagaat	ccttaagcag	tgttagttca	gatacaaggg	cattataaat	gagagtgcct	310800
gagggatcta	ttttgggacc	gctgtcactt	ggctcttctg	ctaataagct	tccagtgtgg	310860
tggccctcct	tcaggcatgt	ttccactgag	ccacgggctg	gatgccacat	ccccggcctt	310920
cccacagtta	tcagcagccc	acaggcttga	cttgagcaag	ttggaaagac	aaatcaactt	310980
ccagagttga	tttaacattg	agtggaaatc	agtcataact	ttggctccct	ttcggggcca	311040
cgctggcac	tgtgcctggt	ggcagatcgg	catgaaactgg	ccagcttctg	tggccctgga	311100
gggcacaggg	agaaaggcca	cactcagtc	catgatgaac	tgtttaagac	ttattgttgt	311160
ctccccgctc	tgtaaagtag	atagagtgg	ttttatgtcc	cttattacct	ttcaggatac	311220
tttgactcag	ggagataaag	taacttgggt	acagctactc	agctggtgaa	gaacacaggc	311280
agaatgagtg	cctgggtctt	ttgacttaaa	attctggatt	tttcacaaag	atcctcttac	311340
tttattcatt	tacataataa	atatataattg	aagagctact	ctgtgccaa	ccctgtgcct	311400
agatatacag	tgataaataa	agagtagctt	ctagaggtca	cctggcggtg	aggcacaggc	311460
cagctggcaa	gatggaccac	agaagtcagt	gaatgaagac	aatgacaagg	gtgggaagcg	311520
ccatatggga	agagaaccaa	gttcagtgat	agagagcaga	ggtgaggcgg	cagcagaaac	311580
cacttaaggg	acaccacgtg	gcactccttc	tgtgctgaga	aggctgtcag	taagctcacc	311640
atttatttcc	tattttctct	cctgagttaa	ataggaaaca	tgtctcgcct	tacttgaaaa	311700
atcaagtcaa	actatgctct	tactaggagt	tatggttctt	tttatgtctt	agatgatgct	311760
tgatctagat	gaatgcggac	ttgctgtagc	tagataaata	caatgggagt	ttgaagggtg	311820
ttcgtagccc	tggaaatagg	tatttctctg	caaaacaagc	tttgtcattg	ccagcagaca	311880
aaagcatcag	taaccttggg	tgataatcgt	catttcttag	gaataaagta	gactgtagaa	311940

FIG. 6B4

tttttttttag	cagaaaggaa	acccaaagat	aattcttagtg	caaatccctc	actttataga	312000
gcagaagctc	aagtcccaga	ggaacaaagt	gcttgaacga	acatcagaat	tttaggggct	312060
ggattttgtac	cctcctgggtg	ccagcagccc	acttccctgc	aggaggcact	caccttcctt	312120
gcacaggggt	atgagtgtgg	ccattttcca	cccataatct	ctgttagctc	atgttcaatt	312180
gggttcccat	tgaagaaaa	atggaccagt	aagttggagc	agaatcattc	agatgggtata	312240
acataaggaa	aaaotttgcc	caaggcaa	cgtgattgtg	acagctttgt	gattttttaga	312300
gaatagcatg	ggccaggcac	agtggctcat	gcctgtaatc	ccagcacttt	gggaggccga	312360
ggcaggcagg	tcacttgagg	ttgggagttc	gacaacagcc	tgaccaacat	ggagaaaccc	312420
tgtctctact	aaaaatacaa	aattagctgg	gcgtgggtgg	gcatgcctgt	aatgccagct	312480
actcgggagg	ctgaggcagg	agaatcactt	aaacctggga	ggcggagggt	gcggtgaacc	312540
aagatagcac	cattgcactc	cagcctgggc	aacaagagt	aaactccgtc	tcaaaaagag	312600
ttcacagttt	ctcttttgc	ttgattttct	tatctgccgg	ataacaatag	tatttttgga	312660
ggcaggagga	atttgtgaaa	gaaatgggtt	ttggggagtg	gctgattgga	ggcaaatcca	312720
aggacactca	ttgctgggtg	gtgactccag	gcagttactc	agcttttcca	agcctcagtt	312780
tccttattgt	aaaacaggac	catggtctag	ctagtagcat	tcctatgggtg	agtgaataaa	312840
tatgtataaa	gctcctgaca	cagtgcctgg	catatatacag	attgagccat	gtaaaactgc	312900
caatatctgg	ctattttatga	cctacaaaaa	tagcattttca	tatgattcca	cctaactctc	312960
gaagcgcaat	aaatgttatt	attgataatg	caggtgggtg	tgataaagtt	ttgaaatcag	313020
aaagacctgg	cttcaaattc	cacgccttca	ctggcctgac	ttattttcat	tcatttgaca	313080
aatattatth	tgaacacccc	tatgtgccag	gcactatgcc	aggctcagag	atgatctagg	313140
aaaaagacag	atgtcctcat	ctgtccttag	ctcttgtggc	ctaagcctaa	atthcctcgt	313200
ctgtcaaatg	ctgacagtaa	cacactcctt	accagagagc	tgggaggatt	ggagagctca	313260
gttcccaaaa	ggccaggagc	actgcggcag	gtgaaaagta	ttccctcaat	ggcgggaagt	313320
tttaaattgc	ttttatatct	gtagctctag	ataacactag	ttccagctta	gttaactccc	313380
agctccaagc	cttcaggact	tcataagagt	attgggggtg	tgctcctggc	agtttcccaa	313440
aaagctagaa	tgcagaggga	atctccttcc	caaaaagcta	gaatgcagag	ggaatctcct	313500
tcccaaaagg	ctagaacgca	gagggaatct	ccttcccaaa	aggctagaac	gcagagggaa	313560
tctccttccc	aaaaggctag	aatgcagagg	gaatgtcctt	ctcttctaaa	tggtagctgt	313620
tagttcaaga	aaggttaaac	attgtgctgt	ggggaggctc	aggggtgaag	gggtgtacttt	313680
taagagaacc	agtttcagag	ctgggttttg	ggtttaagcc	ctaccctctg	ccccctttta	313740
cgagctgaca	gccttatgca	agcctgggtg	accacctgaa	cccacgtttc	cacatctgga	313800
aatagaaatg	tgggtactag	ttatgttgaa	aggactcagg	ttagatgata	gatatgcaaa	313860
taccttgga	accaggagt	tccagctctt	tgggttccct	gagccacact	ggaagaagag	313920
ttgtcttggg	ccacacatag	aatacactaa	ccttatcaat	agctgatgag	ctaaagaaaa	313980
aacgttgcaa	aaaaaatctc	atatttttaa	gaaagtttat	gaatttgtgt	tgggctgtat	314040
tcaaagccat	cctgggccac	gtgcgacccg	caggctccgg	gttggaacaag	tttgttgtaa	314100
acaatgccat	gatgcgggca	taaggctcgt	accagtatta	ggaagggtct	cagggtttcct	314160
ctagcccttg	ggctcttttc	ctgaagtgcg	tgtgtcttct	gctagattht	gtgaccaatg	314220
ttgattgcct	aattgggcta	acagcatgth	ttggtggcta	cgaaaactgac	acaggtgttt	314280
tcatttctcc	acttagttcc	tgtgcggttt	cttggaactga	tgtacttgtt	tgtgaggcaa	314340
aagtactttg	tcggttacct	aggagagaga	acgcagaggt	aggtaactgg	gactactaaa	314400
gaactgtgga	gcgattcctg	atthtttgagc	aggaagagt	acaattcaaa	acagtatttg	314460
actagattca	cggctccgta	gcatccccct	gggtgggagg	gggaaggctg	actaggacct	314520
ctgattcttc	ctttccctgag	ctttgaaggc	tctgaaaata	cagctggggg	gacttgccca	314580
gtttctttat	taagcaattc	ctccgcactg	tctggctttt	caaagggtgc	ttcagtgctg	314640
tttgctgcac	gtgccttgca	gccccacacc	ctgcactccc	gccctgcaga	gtctggcgct	314700
ggaatgacat	tttaggtctg	ggttcccagg	cctcctgaga	gtgaaatgtt	tcattgtttg	314760
tctagagaaa	tgagaactaa	agcttgacac	ttgtgataag	ttgtcctgag	gaacatatct	314820
ttcaggggacc	agaagaaaga	atggtgggaa	aataagatgc	agtaagatgc	agacatgaca	314880
gcagggtgca	gcggctcacg	cctataatcc	cagcactttg	ggaggctgag	gtgggtggat	314940
cacctgaggt	caggagtthg	agaccagcct	ggccaacatg	gtgaaacccc	gtctctacta	315000
aaaaatatac	aaaacattag	ccaggcatgg	tgggtggcgc	ctgtaatccc	agctactcca	315060
taggctgagg	ctggagaatc	gcttgaaccc	aggaggcaga	ggttgcagtg	agccgagatt	315120
gcgccactgc	actccagcct	gggcaacaaa	agcaaaactc	catctcaaaa	aaaaaaaaaa	315180
aaaaaaaaaa	aaagatgcag	acacgagact	gtgaaactga	ctagcatcac	cattgcattg	315240
tttatagatg	ttgccagaca	gaaagcccca	aagcagcaca	gtaccttccct	gacattctgga	315300
ctagggaatc	tagatthttag	taaaatacat	gctaactact	acagaagaaa	tgtcggcggt	315360
agagtatgcc	gtcagttcct	tagagattgc	aattccta	gcactagtat	ggtttcagggt	315420
gccaggaaca	cgthctgtga	ggctgctgcc	ccagggtgctg	accccgacct	tcacacccat	315480
tttcttctct	tgtgttcaca	gccgctctgt	ctthttaca	agcaccctct	tctagtgggt	315540
aatgggctct	atgattagat	agcatccttc	agtagtgata	aaggcagtg	catcctagggt	315600
aggtcagcgg	gtgaaagcgc	tatatctgga	aaacttgaga	gcctgtgaag	ctcaaggagt	315660
tgacgggggt	agaccgtgag	ccgggctgca	gctggaaaaa	gaatgactgt	tctttcagca	315720
gatccttccc	tgtgccatct	ctthcttcat	tcctctctag	tggcattctt	atthtctctc	315780
taaaaccaca	attccattat	ctctcctatt	cttatcaaca	ctgccctaaa	tgatattctt	315840

FIG. 6C4

tatttctcttt	tgccctggaa	aacctctatc	atgccttttc	ccatgtgatt	acctcgttaa	315900
gagtgggggt	ggaatgtcta	gcaatgaaat	aagagggtct	tctctttttgc	ctggctccct	315960
atgcagccct	atcttaccct	ctgcaaagtc	ccagggatgt	ggctcagtc	ctgctcctct	316020
cttcatctgt	caccacttgc	ttgagatcct	acagctgctt	taattccgag	acctctcgca	316080
gaacatgaca	aaatttgtcc	acctaccctc	atgtcctttt	aacttttaag	gctttactaa	316140
ctgattccta	ttagggaatg	aacagagggtg	gcaaaaaataa	acaataggag	attgattttac	316200
aagaaatctt	taaaatagta	gatttcttctg	gacctcattg	aaatataaat	ggcctgcctt	316260
cttgtgtccc	tccctgggtct	ccctcttttag	gtgataagaa	gaagatccctg	ccagccccc	316320
aaccgcgcat	ctgcgcgggt	tctagacccc	cttctcctcc	cctctggccg	tggtaggcat	316380
tactgatgaa	tcatgggtgct	ctttctttcca	gagaccaaac	ctggcctcgg	aatccttctt	316440
aacacagata	ctgcttaaca	caaccactct	gagcagctgt	cataagtaga	agtaatagat	316500
actagaagaa	atgtctaaagc	ctaattctaga	ccaaaatacgc	gcctgatata	gatgcaagcc	316560
agaggggctt	tatgggttaa	tgcaaggaga	ttttcaaccc	tgccgtctag	aagctacttg	316620
ctgagatctt	cttcagttgg	gcccattctcc	tcccagggcc	tctcttctgt	tcctgggcta	316680
tgtcacactt	ggactctgca	gacacctaat	gctcttgga	cctgcttttag	ttcttgacct	316740
caccaaccga	ggaggaattg	ctagatgaga	tccctcccc	ggaatttctc	tcttgaaacc	316800
cagatgggtc	gttgccctt	tccagaagtt	gctccagccc	tgcccgctta	ggaagttcag	316860
tgtcatcctt	gatccagtgg	gtagggaaga	cattccataa	tgaatgcccc	agtctgagct	316920
tcttcttcca	ggcttcaggc	tgccctgcga	ggattttgca	gctccctttt	taatgccttc	316980
tagaagtttc	tggctcttat	tttcagccct	tcactcctact	ctctctgacc	ccttctctta	317040
tcctgtttag	ttcacctgta	gcagttacta	cccagcagtg	aaggatgaat	cttgggttctg	317100
tttcttttct	ctttctttct	ctttcttctt	ctcttttccc	cttcccttcc	cttccctccc	317160
ttcacatcac	ctcatctcac	ctcaccttac	atagttcttg	tctgtcacc	aaactggagt	317220
gcagtggcct	gatcttggct	cactgcaacc	tccacctctt	cccaggttca	agtgattctt	317280
atacctcagc	ctcttgagta	gctgagacta	caggtgtgca	ctaccacacc	cagctaattt	317340
tttgtatttt	tagtagagat	agggtttagc	tatgttggcc	aggctggct	cgaactgctg	317400
aactcaagca	atctgccatc	cccggcctcc	caaagtactg	ggagtatagg	cataagccac	317460
ccatgatgcc	cagcctgaat	cttgggttct	tcccattcca	tttaagctat	tacctgggcc	317520
tgaactcaat	ggcacctggc	accaactggc	aactgactct	tggctcttta	ttacctacct	317580
tccttagcag	gcactgggtt	gctccctctt	cctatcccat	ggagtccctg	cctctgttgg	317640
ggctcctact	gatcctcttg	gcaatatgaa	gttctcagct	caatgggtgg	tgggcaatga	317700
ctgccaactc	ttgaggccaa	tgaactcagg	ttaccccact	cctcctcctc	ctgagttgct	317760
cactcactcc	tcattcactc	aacattgatt	cagtagatat	ttgctacctg	ctctgtgcca	317820
ggtaaccagg	gttgctgcta	aggagtaaca	gtgaacatga	cggagtcttt	gtcccgaagg	317880
agacccaagg	tgtctcctag	agccaggggc	acattgcaag	accaaataata	ttcaacttac	317940
caaaataatc	atagacctag	ttctcaaaaa	gcaagaagac	tgattcctcg	ttgtcatttc	318000
tcctcctcag	catcaatgtt	ttagagctctg	tgggcccctc	caagtgtgga	gtatgggtgtt	318060
acttcaccag	agtttgagga	gaaacattct	tcttttgga	ggccgggggag	catagatgga	318120
tatcaaggct	gctgtttcta	aaagcgaaac	ccaccaaca	acagtattag	aatcatctgt	318180
ggtgcttatt	aaagatacag	attcctgggc	cccatcccag	acttatgaat	cagaatctct	318240
gccagaggaa	gcctgagaat	ttgcattctc	agatgattct	gcattctcag	ataacacatt	318300
ctttaggtga	ttcttacaca	cactggaggt	tgggaatcgc	tgaaggctgt	tcacttctct	318360
tttctgagaa	atgattcatt	catttcagaa	atatattgcag	aggctccttat	ttattggaga	318420
tttgtgggtg	ggcagaggag	aaatatcttg	tcttcacaga	gcttacaatt	tttattttct	318480
ttagagggtc	ccaggcttaa	aatgacattt	ccctaaattc	tgaaaagaac	agatttttaa	318540
aacaagaagg	gactgtaatg	ttttctgttc	ctacctcgta	ttttgttcac	attaagaacc	318600
tgggggtgga	agtggaggag	ggggggtgac	tggcgggggg	ccacagagag	ctgagctggg	318660
gtgggtctcg	actcctgaac	tcaagcaatc	tgccagcctc	agtctcccaa	agtgcaggga	318720
ttataggcat	gagccaccca	cgatgcctgg	gtggaactca	gggctctgga	tgccctggcg	318780
ccccatctc	ccacactacg	gcgcctcatc	ctagaagtgg	ttagcacctt	tgagatggga	318840
attattttagc	aggatgcctt	tgtgttttca	tgtaagtttt	atgctgcctg	tggagggcac	318900
agctgttttca	aaactaataa	ccaaatcctg	gtctccgaag	tctgaaggca	tcctttgccc	318960
tgcaagtcaa	agcacgggat	tctggcctca	cacaggcagg	tctgaactcc	tgtgttgcc	319020
cttgctgggt	gtgggaacctg	aggcaaatca	tgcaacctct	cttttctgtt	tgccatagatg	319080
gaaaataggt	ttacaatacg	ccccatagg	atggctgtga	gaattaaagg	aagtcatggg	319140
tgtacaatac	ctggccctga	aagatgctta	ataatttaat	tctgaccttc	ctcactcatt	319200
taggattatg	taccacattt	tagaaacaat	gaaagattag	tgagtcttct	gtggttggta	319260
taaaaaaaaa	atagaaacat	gaaagagatg	tcctccttgt	tcaagggcta	atgacctggg	319320
tgtgcgctgt	ctaggccccc	aaggtcttcc	ttccctgtct	acagcatttc	aggttctccg	319380
cagcttttgt	gagcctgggt	caggttcggg	atctgcccac	catgctcact	tgccacagct	319440
gtggccccc	ttccaaactt	cagagactta	aagggtgcag	taatgatgtg	cccgccctgg	319500
ggtcacattc	ctcgagccct	gcagacaagg	gagcaggagg	ctgagctctt	atcttccaca	319560
ccctgtgcac	agcctgggaa	gagttaaagc	accctagctc	tatgctgcga	gggccacatg	319620
ccctgagacc	ttggaaaaaa	tcctacctga	attgaagagc	atcactatct	catcaggagg	319680
cgctgccatt	tcattttttca	cttcggtttt	atcttgagtg	taaaacagct	tcgcaaatca	319740

FIG. 6D4

ctttttcttgg	tttctgtaat	gagcatatgg	tggcctcatt	cgtgtgataa	atctgagcca	319800
ccacgatatt	tgacttttca	caatttaatt	tatctgaacc	ctctattctc	tggctaaaaa	319860
atatccctta	cttggacttc	tttattttat	tttcaattcc	cttaccagca	ctagcagggg	319920
actctgtact	catctgctgg	cgctgccata	acaaagcact	gcagcctggg	gggctcaaac	319980
cacagaattt	attctctcac	agtcctagag	gctagaagtc	caagatcaaa	gtgtgggcag	320040
ggtcggtttc	tctctgcagc	tctctccttg	gcttatagag	tgccaccttc	tacctgtgtc	320100
ttcacatcat	cacctcactg	agcatgtctg	tgtccaaatc	tcccttctt	ataagacccc	320160
agtcatactg	gatgaggatc	cacctatctg	agttcatttt	accttaatta	tctctttaaa	320220
cacctgtctc	ccaaatacag	tcccattctg	aggaactgag	agtaaagatt	caacatatga	320280
attttggaag	ggaccttaatt	cagcccacaa	cacctctctt	tgggatgttt	attttcccc	320340
ttaaggagct	agtttaggatg	tcttatctca	tgaacatgac	tgtgaacagg	aaaacaggga	320400
gagaatgaag	ctggccaagg	aacagggtcg	gtgtcagcta	gcagtgtctt	tctgatgtga	320460
gtgggtccca	caggagctt	gttaaaatgc	agattctgat	tcattagggt	ccaggggag	320520
ctgagatttc	ccatttctga	caagtttcca	gtgtgggggc	tgatgtctgt	gggtccacgga	320580
ccatactttg	agtagcaagg	agcttgatac	ataatggctg	agtgaacttc	agactcctgc	320640
tgtagaaaaa	ttatgagttg	gctgggcgtg	gtggctcacg	cctgtaatcc	cagcactttg	320700
ggaggccgag	gtgggcagat	cacctgaggt	caggagtctg	agaccagcct	ggccaacatg	320760
gtgaaacacc	atctctacca	aaaatacaaa	aattagccag	gtgtgggtggc	agggtgctgt	320820
aatcccagct	actcaggagg	ctgaggcagg	agaatcgctt	gaaccgggga	ggcagggtt	320880
gcagtgatct	gagatcgtgc	cactgcactc	cagctgggca	atagagcttg	actcagttct	320940
aaaaaaaaaa	aaagaaaaga	aaaagaaaaa	ttatgagtta	tattatcagc	atatgggggtg	321000
cctttcaaat	tgataaaatt	tctaataatta	aacctgtgga	tgccaaatgc	tgctctctga	321060
ttatggcagg	aaacggcact	tggcagtagc	aagttagctg	ttgggctgag	ctggctcatc	321120
ttgttgtgctg	gtcctgattg	cctaaagatg	ccttccagg	atctttacta	acaatcctcc	321180
tgagtcatctt	ggactttccc	aacctgttat	cacctctcag	atggggccagc	catggaggca	321240
gtcagaggag	ggctctgcag	agggagggca	gaaacagggt	ggcctctgca	tgccattagg	321300
aggtcacatc	tcaactggggg	atgcagttta	ggatttagtg	ccttgagag	aaggatagag	321360
tatattaaaa	catgtctccg	ctaggcatgg	tggtttacgc	ctataatccc	agcactttgg	321420
gaggccgagg	tgagtggatt	gcctgagctc	aggagttaa	gaccagcctg	gctaacatga	321480
cgaaacctca	tctctactaa	aatacaaaaa	gttagctggg	agtgggtggc	tgccctgta	321540
gttgacagcta	cctgggaggc	tgaggcatga	gaatcactta	agcccagaag	actgaggttg	321600
cagtgaagccg	agattgcacc	actgcactcc	agcttgggct	acagagtga	actctatctc	321660
aaaaacaaag	aaacaaacaa	caacaataac	aacaaaaacc	aagtctctcc	ctccactcaa	321720
aaatgcaagg	gcctgtctcc	cattgtctggg	tgcccaggtc	tcataaatgt	agatatgaat	321780
tattccagtc	gaatcagaatg	gaatcagaatg	agcctcaga	tgccgaagca	cctttcagat	321840
tccaccgggtt	ttatcggtct	atttaaaactt	cacttctaac	acagtctctg	attacacacg	321900
tgtctgtctgt	tatgggcagc	tgcagagagg	gtcttaaatg	tcctaattgct	cagtgaggat	321960
gcccattggt	caacagaacc	tgccatcttc	aggccatcaa	ggagctctgg	agttaaggaa	322020
atcatgagag	cacagagggg	cgggtacagc	agagccctcg	tggtaattgg	ttttgagggtc	322080
taggctctct	tcaactgggt	ttgaaataag	ttcaatgact	agtaatagct	gagacacttc	322140
tacccttcaa	atgaagtataa	tgggaaaatg	gagcatgtgt	gagttccagg	agctataatt	322200
taaaccccat	atatctaaaa	gggttaacat	ttttgtgtgt	gtgaaattgg	tgtcattcgc	322260
actgcatcta	cagttttctt	tttcttctc	ttccagcacc	cctggctaca	tatttggggaa	322320
acgcatcata	ctcttcctgt	tctcatgtc	cgttgctggc	atattcaact	attacctcat	322380
cttctttttc	ggaagtgact	ttgaaaacta	cataaagacg	atctccacca	ccatctcccc	322440
tctacttctc	attccctaac	tctctgctga	atatgggggt	ggtgttctca	tctaatacat	322500
acctacaagt	catcataaatt	cagctcttga	gagcattctg	ctcttcttta	gatggctgta	322560
aatctattgg	ccatctgggc	ttcacagctt	gagttaacct	tgcttttccg	ggaacaaaat	322620
gatgtcatgt	cagctccgcc	ccttgaacat	gaccgtggcc	ccaaatttgc	tattcccatg	322680
cattttgttt	gtttcttcac	ttatcctgtt	ctctgaagat	gttttgtgac	cagggttgtg	322740
ttttcttaaa	ataaaatgca	gagacatgtt	ttaagctgat	agttgagggg	ttttgttaatt	322800
ggcttttggg	ggattttatct	ctataccctc	aaacgactag	tttgttttcc	tcaaaactaa	322860
tgataaatatt	aaaaatacac	atcctggcca	ggtgtggttg	ctcatacctg	taatccagc	322920
actttgggag	gccgaggcag	gtggatcact	tgaggctcagg	aattaagacc	agcctggcca	322980
atatggtgaa	agcctgtctg	tactaaaaat	acaaaaatta	gccagggtatg	ctgggtggatg	323040
cttataatcc	cagctacttg	ggagggttgag	gcaggagaat	tgcttgaacc	cgaggaggtag	323100
aggttgcaat	gagccaagat	catgccactg	cactccagct	tgggcaacag	agtgagactc	323160
catctcaat	taaaaaaaat	acacatctgg	ctcttggaat	aattacttga	agatctttta	323220
tgacatccat	ccctcttcac	acagccatgt	gaattagggt	ggtatcttca	tataactaga	323280
tcgtgccag	cacttccatg	ttatacagtt	taaaatgttc	tgtaattccc	tgtgggaacc	323340
taagataatg	cgaggaccgt	catacgtgcc	cccaaatatt	ggcaaaccaa	tgaataaatg	323400
aatgaatgag	tttatgaatc	gctaactggc	tgtattttaat	gaagtatgtg	tgttgagcca	323460
tttccacag	tgtggacaga	tttgtccac	aatatgggac	tcttcccaa	ggccctacca	323520
cctaattgcca	tcacactggg	gatttgattt	caacatgtga	atttggggag	agtgcaaaaca	323580
ctcagaccat	agcaccatct	cagtaaatgt	ccactgggtc	actcagttca	tagtgacagt	323640

FIG. 6E4

gatccagcca	ctgtcatgac	aggtgccact	tggcagaaac	agcacagctt	ggaagatggc	323700
ggggtgtagt	caagattcca	ggatcccca	cagagaagcc	agctottata	ggggagccat	323760
tcatcaggat	tgaactctca	atcgagctgg	acagtaatag	gtgggtctgt	gttattcccc	323820
agatgagtat	catgacagtc	acaatcctag	gaaggatgtg	aagcctcccc	cagctctcct	323880
ccagttgcct	gcttgggcag	cagagatgat	ggaatgtgga	gtctggcgtg	gtctgagggc	323940
tgaatccatg	tgccctcatgt	atgatgctca	ggcaagagga	tctctcaatt	caagggagag	324000
ggcctgaatg	agccttgctt	tccaggcctg	tctgatggtc	caggctgaag	cccctcctgg	324060
cttgcaactgc	cagacctcat	ccagcaggag	ctccttgga	ttgactgctt	caggatagtt	324120
gcttctgctc	tgagtgtctc	ctaaagagca	gtgctctacc	atccaagctg	ggcttttctt	324180
ttcttcttgc	tgatagggaa	ggcatgggac	attgcaggat	ggaagtggcc	cccaggcctt	324240
ctcatgcctg	ggcttgggtt	ggaaggtggt	cagggtgatca	ataatcctga	ttggcctggc	324300
attgaggagt	tttcttgggg	tgtggctcct	tcggtttttt	aaaaattatt	tttattgata	324360
cacatatttg	taggtatttg	tgggtgtcat	gtgatacttt	attatgtgtg	tggattgtgt	324420
aatgatgaag	tcagggcatt	tagggctctt	atcaccttga	ttatcatttc	tatgtgttga	324480
gaacatttca	agttctcagt	tccagctatt	ttgaaataga	cagtccattt	tgtagctac	324540
agtcacccaa	cccggctgtc	agacattgga	acttaactct	attgaactgt	gtatttgtac	324600
ccattcacca	aactctcttt	gggctttcag	ttttacaact	gggatgatcc	tgggaaaact	324660
aaagtaaatc	tgacacccga	cgtgtgagct	agtttataat	atgccagctg	gaccctggg	324720
acatcttagc	tttcaggagt	catgctgtcc	aagctgactg	tggggcttcc	agaaggtggg	324780
gagaggaaat	gatgcaatgg	cccatcagag	gcactacttg	gggcttggg	ccagagtgc	324840
tgtctaaggc	attaagggga	ggggagagca	gccttcataa	ttatgaagag	gagctctcag	324900
tgacacagctt	ctgatgaggg	acagcttcta	attgaagaca	gcatttgtta	atgctcaaac	324960
tccctgtctt	cagagtgcct	gctgtatccc	accatcagtt	ctgtgacttc	tccctaagcc	325020
tcaatttttg	atgtgttaca	ttgggataat	aactagtcca	aactcatggg	gttgtgagga	325080
ataatgaggt	aaagcaattg	aaaaggttta	gcacaatata	agtgtcfaat	aaaagccatt	325140
attattattt	tattacacta	gttttcaatt	cctgcatagc	aaattcttgc	aaatgtagg	325200
actcaaaaca	atataaattt	attatctgac	agtttttctg	ggtcagaggt	cttactaggg	325260
tgtaatcaga	gggcaaccaa	agctgtgatc	tcagctgaag	ctcaggattc	tcttccaagc	325320
tcactgggtg	ttggcagaat	tcagttcttt	ccagttggaa	gactaaagcc	tacagtcttc	325380
agtctctaga	agccttttct	ctggcacagg	tttctctaca	acatggccat	ttatgtcttt	325440
aaggccaata	ggagaacatg	attagcatat	tttttttaag	tgaactttag	accctttttt	325500
aaaggcctat	ctgattaggc	caggcccaag	tgagctttta	gtcaactgat	tagagatctt	325560
aattacatct	gcaaagctcc	ttcatgttta	ccgtataaca	taacttagtg	aaaggagtga	325620
aattgcaacc	aggttctgcc	tgcactccac	ggaaggggat	tctgcagaag	tgtgggtcac	325680
gggggggtta	ttttgggatt	ctgcctacgt	cactgagtca	aaagaagctg	aatgggtgtg	325740
atgctgaggt	ttttgggcag	cagcagtgtg	tgtgtgtgag	tgaattcata	cgtatgacca	325800
cctgggaaga	aaggaggctg	tggtttctct	caoctcctgg	cagacagaga	aatttctttt	325860
tttttttgag	acagggtctg	gctctgttac	ccaggctgga	gtgcagtggc	ttgatctctg	325920
ctcactggct	cactgcagcc	tctgcctccc	aggttcaagt	aattcttctg	cctcaactcc	325980
aagtagctgg	gattacagac	acacactgcc	acgcctggct	aatttttgta	tttttagtga	326040
agacagggtt	ttgccatggt	ggccaggctg	gtcttgaact	cctgacctca	agtgatccgc	326100
coacctcagc	ctcccaaagt	gctgggatta	cagacgtgag	ccaccattaa	ccatttttct	326160
atctcctgtg	ggaaagggca	cagtgaagaa	acagatgaag	ctgagacata	caagtgaact	326220
cctccctcct	ctccatttag	actaaaatag	gattattcat	actgagattc	tccctgggtg	326280
caaagagata	atctgtgcaa	ctgggttttt	acaattatcc	ctaccctatg	ctttctctat	326340
ctgtcttctt	cgtagtccgc	tcaggctgct	ataacaaaac	accataactg	ggggcttttg	326400
aacaacaaaa	ctttacttct	cacagttcta	gaggctggaa	atccaagatc	aagtttcttg	326460
cagattcgggt	gtctaattgag	gtcctgcttt	ccagtttata	gacagtgcct	tatcgctacc	326520
gccttacaca	gtggaaggag	aggacgagaa	gtccttggg	cttttttttg	tttcttctt	326580
tctctctctc	tctctttttt	ttttttttaa	taaggctcact	atcttagtcc	attttgtgtt	326640
gctaaaagga	acatctgagg	ttgagtaatt	tatttttatt	taaaaagtgg	ccaggcatgg	326700
aggcttatcc	tgtaacctta	atcctttagg	aggccaaaac	agcaggattg	tttgaggcca	326760
ggagttcaag	accagcctag	gcaagatagt	gagaccccat	ctaccccatc	tctactaaaa	326820
ttttaaaaaa	ttagctgtgt	gttgtaaggt	gtgctttag	tcccgccac	ttgagaggct	326880
gaggtgggtg	gagttcaagg	ctgcagtgag	ttatgattga	gccactgcac	tccaacccgg	326940
gtaacggggc	aagaccttgt	ctctatttta	aaaaaaaaaa	tctttatgtg	gctcactatt	327000
ctgggtggct	ggaaagttca	agattgggca	tctgcatctg	gtgacagcct	catgtcgctt	327060
ccagtcattg	gggaagacga	aggagagctg	gcacgtgcag	atatcacgtg	ttgaggcgag	327120
aagcgagaga	gagaggggag	agatgccagg	ctctttttta	caaccagcac	tggggaaact	327180
aatagagtga	gagctcactg	actcctgagg	gaggacatta	atctattgat	gagcgacctg	327240
cctccatgac	ccaaacacct	ccaacgatac	cccacctcca	acactgccac	actagggatt	327300
aactttcaac	ttgagattta	gaggggggaa	acttacaac	tatcgcaggg	actaatacca	327360
ctcatgaggg	ctccaccttc	atgacctaat	cacttcttaa	aggccttacc	tcttaattct	327420
atcacattga	ggattcgatt	tcaacttgaa	ttttgggggg	acaccaacat	tcaggccata	327480
gcatcatctc	aataactgtc	ccattgggtg	tcactcaggc	cccaaacaaa	ggaaccttcc	327540

FIG. 6F4

tccattcctt	tccgnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	327600
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	327660
acatctcacc	atctccactg	ttatccctgt	cacctgggce	caccattctc	tctcctggac	327720
agtctccata	gccacctctg	tcagatttat	tttatttttt	tatttttttt	tttgagacag	327780
gttccctgctc	tgttgcccag	actggagtg	catggcatga	tcacatctca	ctgcggcctc	327840
catcacctgg	gctcaagcaa	tccctccatc	tcagccctcc	aagtagctgg	gactactggc	327900
accaccatac	ctggctaatt	ttttgttggt	gttggttaat	ttttaataca	gatgaagcct	327960
cactatgttg	cccaggctgc	tcttgaaact	ctgggctcaa	gtgatccctc	ggccttggcc	328020
tcccaaagt	ctgggattac	aggcatgagc	caccgtgccc	agcccatcag	atgttaatgc	328080
tacacgcact	tgcttaaaat	ccccagata	attctcgtct	ctcttgggaat	aattcccaca	328140
caccttggcg	tgcccatgca	ggctctgtgc	catcgatat	gtccctgccc	cctctcccaa	328200
ctcctccttt	cgcttgctcg	ttcactcagt	tccagccaca	ttgccctggg	agctgctccc	328260
accatggggc	ttcctaattg	actggtctct	ctcatgcagt	ggggcctctc	cctcctttta	328320
ctcagtgctc	cccagcacc	acctcctcca	gagccttccc	tgaccaccac	acctacacct	328380
aggcccttcc	tcctccacgc	tccctcctcc	acccggcct	cctaccacag	tgctacttct	328440
ttatactcgc	tgccacctga	aattagatca	tttatttacc	cctttatttt	ttcagtttgc	328500
cttgtccgtt	agaaatataag	cttccaaagg	gcaggagctt	tgccctatatt	gttagggcgg	328560
gcatacaatg	agcactcaaa	aaaatatatt	atgagtgtat	gaaagaacag	actgggttat	328620
gtaattgtgc	ctacttacct	atatgaccgt	gtggtggggt	ttatgggtgg	tgtgggtggt	328680
atggctatag	ggctataagc	aaatttgagg	caggaggtct	aagaaatgtt	cttaaatttt	328740
agtaagcaaa	gcacccctct	cagaacctgt	cttaaaacat	gaaagttcct	tagtgctacc	328800
cccagaggtg	tgatttggta	ggtcaaggat	agggcctgga	aattcacatt	cttggttaaga	328860
tgttcttcat	cgggggtttg	ttgaccacct	tttcagaaga	tttttgcctc	gtagctgtac	328920
taccaaatgc	agtagttcgt	agtcagtgtg	gctcctgagc	ccttgaagtg	tagctcctct	328980
gaactgagac	gtgctgtaaa	tgtaaattgc	acaccggagt	ttgaagagtt	aatacaaaaga	329040
aaaagggaat	caaaacatct	cattaataat	gctttacact	gattacatat	tgaaatggta	329100
atcttgtaga	tatagtgcgt	taaaataaaat	atactgttag	gcttaatttc	acgtctttat	329160
acttttaaat	tggctactag	aaaaatttaa	ataacatatt	cagctcacat	tataactcta	329220
ttgaacagag	ctgatctata	agttccatgg	aaagtggcaa	gtcttcgcag	ctgaaataaa	329280
ggctggatcc	cattctacgg	gctcatcttt	agcaatgatt	tcttgcagac	gatattgaaa	329340
aatgtggcaa	tgaaagttac	cacaagcatc	aaaccagtc	tgccataaat	tggaataatg	329400
ttatctgagg	ctgttagcat	atgatcatga	gagcggttca	ccatggattt	ctgatcacag	329460
atgtggcaca	ttattaaaat	atcactttta	cagtcaccct	agaggctagg	gttatctgaa	329520
tatggagaaa	gaaacagctt	gtggagctgt	tgtataaatg	aaattactag	aaagtaatgc	329580
actcaattgc	atattggctc	gggggggttat	gtatttataa	atgttttagag	aggactctct	329640
gttcattttct	gcagaattgc	tcttcaaatt	aagaatttgc	ttgacacgct	aatagaccac	329700
agtcccaaga	gaagtttatc	cttttttctt	cttatccttg	ctaagcactt	agatgctctg	329760
ctgataggta	gcataatatt	tctatatgaa	gcttttgtgt	taacattgac	tagtccctga	329820
agttggcaca	ctcttacttg	gcctaaaaga	aatcagcacc	aggctttaag	aaaatcagat	329880
gatctaccta	aggaacaca	actctgtctc	tcttttgaca	attgttgtaa	acaaatttta	329940
atggaaattt	gctttaattg	tgaagaagtt	gctgctaaaa	tggaacttgc	atataaggac	330000
tggaacccat	tgcataagca	gaatgaaata	taagccttct	caggattcac	acttataaaa	330060
aaccattcag	ccaatcaaca	agagggcaaa	agaacaaaca	tttgatgtgt	aattacttaa	330120
tttagtgcat	atgcatttgg	gtcctcaatg	tcagcactat	ggcaaccaga	acatggccac	330180
aataactgtc	tggaatgtc	tattcttacc	tggaacccag	aggccatgcc	ccactgatta	330240
tataatctcc	ctctctcctt	gttacggtct	atccctcaaa	atccctcaaa	aattcatgtg	330300
ttgaaatcct	aacccccaa	gtgatgat	taggaggtcg	gccttttgag	aggtaattag	330360
gtcatgaaga	cagcatcctc	atgaatggga	ttagtgtcct	tataaaaatg	gcccaggga	330420
gctcattcac	tttgtccacc	atgtgagaac	acagcgagag	ggcaccattt	atgcaccagg	330480
aaatgggcct	tttccagaca	atctgtcggt	gcctggatct	tggaacttcac	agcctctaga	330540
actgtgagaa	attaatttgt	ttttataaag	ccaccaaact	tatgggtttt	tttatagaaa	330600
ccgtaatgga	ctaaaacact	ccctaattat	atttaaactt	atcagtgcac	tgggcagtg	330660
catattaaaa	gaatgctggc	caacgtaatt	gacaccataa	ggctggatga	ttcttghtaat	330720
tttcagcctc	agaaaaaggc	tggggagagg	agtcagggga	aaggaggtgg	tgtgtgtgtg	330780
tgtgtgtgtg	tgtgtgtgtg	tgtgtgtgtg	acggtggatg	cctgctgaga	gagaaagagc	330840
tataataaca	ttctgtgggt	cagctgacac	atcctttctg	catccctcc	aatcacctgg	330900
gttaattggg	acctcgctaa	tgtctgaacc	tcatctcatt	ttaaaccttt	gtttcaaagc	330960
ctctcttttc	atgacttccc	cgcttctatt	tttcccatat	gggtgggtta	ttattaagac	331020
attaaatgag	agtggacagg	taggcaaagg	agggtgggtt	caggggagtt	gaggggttgc	331080
tgtgtacttt	tctagactgt	tccacttcac	atcagtgaat	tattcccaat	tgatactatc	331140
atgaaacaaa	gcaaatgaaa	tgctgagcac	ggagcttctg	cttgatgaaa	tgctgaaaga	331200
aaagaaagga	aaaataaagt	agccattatt	tttgcccttc	ctcccacccc	catgtttact	331260
actcttattt	ctcttttgta	ttgttgtgtt	ggaagcacag	catcagaaaa	actcccagtt	331320
ttgagagata	actcagtggt	tagttcactt	aaacctgaga	aaggagaaga	ggatgccacc	331380
gtgaggtcca	ggacgtaaag	aggaaaaaaa	cagacaaaaa	aatccatatg	aatgaaaat	331440

FIG. 6G4

gtgaaagagg	cgcttttcgag	cagatgagtg	ttgtagatta	cagtgttgag	agctgtttgt	331500
gtccagagct	gcttgctgca	cctggcggga	taaacactgg	tctaacagag	gacacctgtt	331560
tcaaggaggc	tgctttttat	ttggggggac	aaaattgttc	ttgaaagctg	ctcagtggtt	331620
caagctacag	catggtggac	tagcagaatg	gactccaggg	cctccgagga	gacagtgact	331680
gctgccagaa	atagtcgaag	atagaaaagga	aggacttcac	tgaggcctgg	gagaagatta	331740
tggaatggga	ctgacagcag	tgacggggag	taaaaggggg	tgtctggggg	aattgtgccc	331800
catggtgaga	gctagagggg	tcacaaaagac	ttaacccgac	gcatctctct	caccctggag	331860
attgggcccc	ttcaatctaa	ctggatggct	ataattttaa	aggtttaggt	attatgacaa	331920
acatggatat	attaggtgat	agcaatgcaa	aatgcatatg	gcttcttgat	ataaaacaca	331980
agacttgaaa	gcagcatctt	tggctgggta	ctacagccac	cctcctctgt	cactaaggga	332040
ggcttttggtg	gaaagggctg	agagcctcta	gactgtgaac	aaaagtaggc	acagaagaac	332100
agttggagat	aataagtaaa	ccatcttgac	aggaatgaag	aatttcctga	aaggaaggtc	332160
cttgagttag	gttggttgat	gctttcagta	gtgagttatt	gaaagtgttt	ggggggtgtg	332220
tgtgtgtgtg	tgtatgtgca	gtatgtgtgt	gtgtgagaga	gagagacaca	cacagagaga	332280
ggggaagata	acttgtgcaa	agcagggttt	taatagaaat	aatttggcag	tttcctagag	332340
gatagtttga	tgataaaaac	cagccaggct	agaaacagga	aaccagctgg	agacaattgg	332400
taggggacaa	tttcaacggg	ctaaatgcaa	gatggcaccc	agacaaagat	ggcagctgac	332460
agaatggaaa	aataaaaatg	aaggtgtaac	attatgaatg	acagcaaaca	ggaagcagga	332520
ttgggttggt	gggatcagga	aaaggagaga	gaataagaga	gaatgcttgg	ttttgagcct	332580
gggtgctgag	gagactcagt	acagataaat	cccaattgca	ctcccaccat	ataccaggca	332640
tatggatagg	tcctgggcat	cagtgggtgat	gacagagaca	atgtcgctat	ctttgcagaa	332700
ctttcattgt	gctggaggac	aggaagcagt	cagagaggca	gcagaaacac	cacagcaaa	332760
taggtcacag	aaacccaaga	gtgaacagtt	tcgatttata	gttctaaata	aatcatcatg	332820
gaaaatgaaa	gttaaagggg	tttctaagnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	332880
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	332940
nnnnnnnnng	tcttatagtt	ctaaataaat	catctatgga	aaatgaaagt	taaaggacat	333000
tggaagctg	tttataataa	gaaagaagaa	tacctaaact	cataataata	accgtgacca	333060
tgcatattgt	actttcttac	cgtaagccgg	aagtgcactg	tgtgctttgc	acgctgtatt	333120
agtcagggtt	cttttggtgaa	acagcactga	tagaattgat	tgattgcttg	attaattggt	333180
tatgagaatt	ggctcacaca	attacggagg	ctgagaaggc	tcaagatctg	ctgcctgcaa	333240
cctgggaaac	caagaaagcg	gtggtgtaga	tcagtgtaa	tctgaaggcc	tgagaacctg	333300
tgtgggaggg	gacatcggca	tggtataagt	actagacagg	gtctggaggc	ccaagagcca	333360
gtagtgtgta	tgtccaaagg	cagaagaaga	tggaagctcc	agctcaaaca	gagaaggaga	333420
gaacttaccc	ttcttcttcc	ttttttttcc	tcaacgaatt	ggaggatgcc	tgcccacatt	333480
ggtgagggca	gagcttctat	attcagctca	ctgattaaaa	tgctgaatct	tctgaaaaca	333540
ccctcacaa	cacatttaaga	agcaatatatt	aacctatctg	ttggctatcc	cttagccttg	333600
tcagggttgac	acataaaaatc	aaccatcaca	tatgccttat	ctcatttaat	tctctaataa	333660
cccaattaag	taggtaatat	taacttcctt	gttttactgg	tgaagacatt	tgcccaaggt	333720
caaagagcta	ggaagtagca	tatctgggat	ccaaattcag	tctatcttat	cttaaagctg	333780
ttgtgaaactg	acttttagcaa	ataggtccat	gcacaactct	tgcatctctt	tggttatatg	333840
atggcactga	gatgtttaag	atgaatgaga	gttagatatg	tcttttagatc	ttgttatcaa	333900
aaaagcaatt	ctcagaagaa	attctgcaa	atacagactg	ttcttgaaac	aaacattcct	333960
ttaaaaagca	ggcccaggag	agttcatgaa	actgtgagct	tgatggattc	acctcctgat	334020
gaaattccct	agagggagaa	gcaacaatat	tccagaggta	ggactctgat	accctgaagt	334080
cagcattagg	caaccagaaa	tcctcctaac	cagtagctgg	tggcagaact	gtctatggat	334140
ggatccacag	tgcatatcct	atgggcatgg	ccacaggcct	cactagattc	ctactgccta	334200
ttcagcacag	gtgcggagca	ctctgacaat	atctctgaca	atattttaca	cagtcaccag	334260
acttgaatac	cttgaattttt	accattgaga	gccttttttt	tttttttttt	ttttttgaga	334320
cagagttttg	ctcttggtgc	ccaggctgga	gtgcaatggg	gccatctagg	ctcactgcaa	334380
tctccaccac	ctgggttcaa	gcgattctcc	tgtctcagct	tccagagtag	ccgggattac	334440
aggcatgcac	caccacgcca	ggctaatttt	gtatttttag	tagagacggg	gtttctccat	334500
gttggtcagg	ctggtctcga	actcccagcc	acaggtgacc	tgcccgcctc	agcctcccaa	334560
aatgctggaa	ttataggcgt	gagccaccgc	gcccggctga	aagcctattt	ctggtattca	334620
tactgactag	caaatctctt	atatcaatca	aaatccattt	gtgatgctca	ctatgcta	334680
tttcaaagcc	taaggtgatg	actgagatct	gaagagctga	agtctttctg	atggaatacc	334740
agctggccac	ctgtggagg	gaagtttcca	tttcagcaac	ttcatgctc	tggagttgag	334800
gcttctacta	atacaaaact	atgattcatt	tctcagtggt	gaggtatttt	aaagtaagtt	334860
atggacattg	taaagtaaat	ccatacttta	aatggttatt	ccataaaaac	tgtaataag	334920
attgtccctt	ttaattgata	cagataaaact	ataaaaata	catattatc	tttttgacca	334980
gggaatctta	aattcatagc	acaagcagga	taataatggc	tcagaatgac	caaccttcac	335040
tatgggtaag	gtatgggtgcc	aagcgggttag	atacatctgt	acctttaatc	ttcaaaaaca	335100
accataaagc	caggcaccac	tatctcatgc	tcattttaaa	gagaaggaaa	gtgagtcctt	335160
tgagagagca	agtaattcac	tacagatcat	atagatagga	actgataggt	aagggatcag	335220
ggtatggacc	tcaagggtgg	ggaggcttga	aaaccctgaa	attaacctca	caatggatag	335280
tatgtggaca	tccattctgt	gcatgttgtt	ttggctgggt	ggttgtggta	agattcctat	335340

FIG. 6H4

gactttcacc	agatttcttga	gcgctttcaa	caccactgtc	taaacaggct	ccgtcagaat	335400
ccagatgcct	tgcttgacag	ctgcctgtca	taagtcaccc	ttataatggg	gcccagaaa	335460
ggatgtttca	tttccctctc	tgacagacaga	catattgaac	tgggtctttt	aatctaaaaa	335520
cacagcaata	ttgtcctaata	ttatggaaaa	catgtcagggt	tagaaaaatc	ataataaatc	335580
aattgatcc	ttgtattttgt	catttatattt	tctgaatttt	tcaatttaga	acaggggcca	335640
aagagaaaa	gatggctcca	cctgtgtgaa	aataaaaagta	aagggtcttt	tcttattagt	335700
ttgtttaaga	aaaacaactt	taaggcattt	tcctgataac	tctcttataa	gccttcaaga	335760
cttgacaggta	atttctaact	ctagggtcct	ttgctatttg	aaaaaataac	ctactcccat	335820
atgggtcagca	ccaaaggaaa	aatgatcacg	tttctttttgt	ctctggcatg	gttttgacag	335880
aaaagataat	tcaagtatct	tacagggtgct	aaagcaacct	aacaaaacaa	aggttaaagt	335940
agtacagaaa	gtggacattt	ttttttgaaa	tatttttccct	tctatcttcc	ttccaaggca	336000
tcttgagtgt	taatggaata	gttttctttt	tgtaccaatt	cttgggtacaa	agagagttagt	336060
tattcttggg	tataactaca	aaatatatat	tttttcttat	cccttttcta	ctcaagtgat	336120
acacatttat	cttaaaaaatt	gcctgaaatt	tctataggaa	aggggtatcta	aatttttgcaa	336180
tatgttgaaa	catattttcac	ctgcccattgc	ccagaaatcc	accacttttg	tgtctggccc	336240
atactttaac	aattaggcta	aaacaaaacaa	atgcctgcgt	gcacttttgag	acctgtctgc	336300
cccttatatt	aagagttcct	gtgagtactg	aggcttttgc	caatataacg	tgaggatttg	336360
gttacatcat	gcagaaattg	atgaaattcc	cactataatg	cttgggtatg	gagagttagt	336420
aagttttttt	gggttaactat	atcagaactc	aggagaaat	tgggtgtggaa	attgattttt	336480
ccaaagcctc	aacattttcaa	acgcaaaacc	tctttcactc	ggtttcttct	ggggaaataa	336540
cagttgggag	ctaataaacg	ggaagagata	tcaggaaaca	taagctccac	gttggccctc	336600
atcttacttc	cagcaccagt	cctgggtgaat	gcttaatcat	gaagcggagc	atctcggaaa	336660
agcctcctct	taggggttagg	gggttgccagt	gtgctatggg	gtcccttctc	ggaggttgct	336720
atggctcatat	actaatttat	tcccatcttc	tgcctcatc	cctgaatcct	tagaacccat	336780
gtgtgagctg	cagcaaaggg	aggtaattca	ggccagagat	cagttaacag	gcactgtaat	336840
atgaatggcc	ctctctttct	tcaaacacct	agtgcattta	cactccatgc	tatgactgcc	336900
tgctttttatt	tctccacttag	tccccccaac	aaaattgcaa	attccacgag	aggacagagt	336960
ttgtcttgca	tttctctttt	gtgttttcgg	caacaaggag	agtgtctgtg	atacagtga	337020
caatgaatat	caatggatga	atactttctt	ttgatgttgc	agaagctttc	atggataatg	337080
cgttttttca	ccagtagat	agaaagcttt	atgaagatag	aagctgggta	ttaatcattt	337140
ttccaccttg	caagacattc	agtttcattt	attgctcagt	gtagatgttt	agtaattgtc	337200
cctgaagaaa	ctggattacc	ccctggacag	attgaattat	ccttagagat	gattcagcgg	337260
attgtcaata	agtggaccaa	gttgtgtgat	ggcctcatta	gaacaattca	taatattaga	337320
aaatggagat	aggggtggtat	ttagattttc	tttttggcat	tggagaagaa	tttacttggc	337380
acgggtttgat	cactctttca	tcttagaaa	actttctttg	cttggcttct	ttctttcttt	337440
ctatgocata	ctctggtgct	agctccttct	tgctatgggt	tgaccccat	aaaactatgt	337500
tgaattttga	tccctaattgt	ggcaatgttg	ggaaaggggg	ctagtgaag	gcctgtggat	337560
ccctcataaa	taccttggtg	ccattcactt	gttcactctg	taatgagtga	gttctcactc	337620
tcagtagact	tcatttagttt	tcagtagagt	ggggtgttaa	aaagttagga	catctttggg	337680
ttttgttctc	tcacacacgt	ctgcttctct	tttgatgctc	tgccatgctg	tgacacagca	337740
tgaagtccct	cgctagaaac	tgagccgagg	caggcaccaa	gcttcttctg	ctttccagcc	337800
tgtagaacta	tgagctaaac	acaccccttt	tcttttagatg	ttatccagcc	tcagggtattc	337860
tgttacggca	acacaaaaga	gactaagaca	gaaaattgggt	accgaggagt	aggatgttgc	337920
tacacagata	tctgaaaatg	tgaagtggct	ttgcaactgg	gtcatgagca	gaggctggaa	337980
gagttcgaag	aagcagctag	aaaaatacta	tattgctatg	aattaagcat	taaggatgat	338040
tctggcgagg	gctcaaaaaa	atacaaaaaa	atgaaggaaa	gtttggaaat	tgttagagat	338100
ttgttaagag	gtggtagcca	gaatgctgat	agaaatatgg	atagttaaagg	tcattcttat	338160
gaactcttag	gtggaaatta	agaacttact	gggagctgga	gtaaaaggca	tccttgttat	338220
gccattgcaa	aaaacttggc	tacactgtgt	ccatgcccta	ggactctgtg	gaaagctgaa	338280
cttaagagtg	atggaatagc	atatctggtg	gaagaaattt	ctaagcagca	aagtgcgtgg	338340
gctgctgagt	gcttgcttct	aactgcttac	agtgaattac	tagaaaaagg	gaaacagagc	338400
agaaaaaatt	ggaaaaattca	cagcctggcc	aaaattcttg	tagagaatga	aagagcccaa	338460
aggtagggtg	aggcagagaa	accccttgct	agagagatta	gcgtggataa	acggaagcca	338520
gggtgctaaaa	gaacaatggg	aaaaagcaat	gggaaaaagg	tccccaacgc	atttcaaaga	338580
tctttaagggt	cgctcttctc	atcacagacc	cagagggtcta	agtctaagat	gacagggttg	338640
tttaggggaa	caagcccagg	atgctgtgtc	tctgtgctgc	ctggggacac	tgggtccccc	338700
attctggatg	ctccagcctt	ggttcatgtg	gccccagggt	tgactcatgc	cactgctctg	338760
tagagagcaa	gcccagagcc	ttagcagctt	ccctcgggca	ctaattctac	agacatacag	338820
aatgaaagag	cagtggagac	gtggcagctt	cctcctagat	attagaggat	gtatcagaaa	338880
gcctgggagc	ccagacagaa	aattgacaca	ggggcagagc	cactacaggg	agtgcctacc	338940
aagggttggtg	gagctataaa	ggcagggctg	ccctcaagac	cccagaattg	tagagctact	339000
agcagcatgt	agtgcctgcc	tgggaaagct	acaggtgtct	gatttcaagc	cctggagcac	339060
ccacatgggc	tctgcccagc	aaaacctagg	ggatggggct	gctcaaggct	ttgggagcct	339120
acccttttca	ccagtgtgcc	taggagggag	cacctggagc	tttaagattt	aatgttcggg	339180
ctactgggct	ttgaacttgt	gtgggacttg	tcattctttt	agtttgcctg	attttttccc	339240

FIG. 6I4

ctttggaatg	ggaatgttta	tcttggaagt	aaaaaacttg	tttttgattt	tacaggctca	339300
gagttggaag	gagcttgcc	tgagcttcag	atgagacttt	ggacttttaga	cattctagtt	339360
gatgccggaa	caagttaaga	cttttgagg	ctattgggaa	gggataattg	tattttacaa	339420
tgaggagggc	ataagttttg	tgggggccaga	ggtggaataa	tatgggttgg	atatgggttg	339480
tttatcccca	ccagatctca	tattgaaatt	tgatctccac	tgtggctgtg	ttgggagttg	339540
gggtctgggtg	ggaggtgttt	gggtcatggg	agggtggatcc	ctcatgaatg	gcttagtact	339600
gttctcaagg	tagtgattga	attcccactc	ttggattagt	tctcttggga	atagattgtt	339660
tccctttgag	ggtgggttgt	tacaaaagtga	ggacacctct	aagttttgcc	cctttccttt	339720
gaccttccac	tgtttcatga	ggagcagatg	ttagcaccat	gctccttgaa	cttcccagcc	339780
tgtagaacca	tgagctatat	aaatctctct	tttttttttt	tttcatttta	agttcttttt	339840
tttttaatta	tactttaagt	tttagggtag	atgtgcacaa	tgtgcagggt	aattacatat	339900
gtatacatgt	gccatgctgg	tgtgctgcac	ccattaactc	atcatttagc	gttaggtata	339960
tctcctaagt	ctatccctcc	cccttccccc	catcccacaa	cagtccccag	agtgtagatg	340020
tccccttcc	gtgtccatgt	gttctcattg	ttcatttccc	acctatgagt	gagaacatgc	340080
agtgtttggg	tttttgtccc	tgtgatagtt	tactgagaat	gatgatttcc	aatttcatcc	340140
atgtccctac	aaaggacatg	aactcatcat	tttttatggc	tgcatagtat	tccatagtg	340200
atatgtgcca	cattttctta	atccagctca	tcattgttgg	acatttggat	tggttccaag	340260
tctttgctat	tgtgaatagt	gccgcagtaa	acatacgtgt	acatgtgtct	ttatagcagc	340320
atgatttata	gtcctttggg	tatataccac	ctaatgggat	ggctgggtca	aatgggtatt	340380
ctagttctag	atccctgagg	aatcgccaca	ctgtcttcca	caatgggtga	actagtttac	340440
agtcccacca	acagtgtaaa	agtgttccctg	tttctccaca	tccctctccag	cacctgttct	340500
ttcctgactt	tttaattatt	gtcattataa	atgggtgtgag	atgggtatctc	attgtgggtt	340560
tgatttgc	ttctctgatg	gccagtgatg	gtgagcattt	tttctctgtg	tttttggctg	340620
cataagtgtc	ttcttttgag	aagtgtctgt	tcattgtcctt	cgcccacttt	ttgatgggg	340680
tgtttgtttt	ttcttgttaa	atttgtttga	gttcattgta	gattccggat	attagccctt	340740
tgtcagatga	gtaggttgag	aaaattttct	cccattttgt	agggttgcctt	ttcactctga	340800
tggtagtttc	ttttgtctgt	cagaagctcc	ttagttta	tagatcccat	ttgtcaattt	340860
tggtttttgt	tgcccctgct	tttgggtgtt	tagacatgaa	gtccttgccc	atgcctatgt	340920
cctgaatggt	aatgcctagg	ttttcttcta	gggtttttat	tgtttttaggt	ctaataaatc	340980
tcttttttaa	gaaataaatt	tataaataga	atacccagct	tcagggtattc	tggtatagca	341040
acacaaaata	gactaagaca	ctctccaa	tcctaattat	ggagagctca	ggcttgctgc	341100
acaagtctct	tgacacatctc	cagatacctg	agtgatcttc	ctcacattta	ataatttcta	341160
aaatttgtct	tctccaaagg	agatcccttt	cttaacctcc	agactaaaat	atcacattgc	341220
cctcatccct	acttaatgtg	tccaaaacaa	aacctctgat	tctccatcca	cacaatcact	341280
ttctccctta	gtgggccc	ctcagtaagt	ggtaactctg	ttctaattgc	tcaggatgaa	341340
accctggcat	caacattgac	tcccttctc	tcatactgca	cattccattc	ttagccaatc	341400
ctgtcagttt	taccttcgaa	aaattatttt	taagatctga	ccattctcac	cacccccact	341460
gcccattgcc	attctaaact	tccaccatca	ctgcagcata	aagctccatg	agggcagagg	341520
gctttgtctg	ttttgtctcat	tgctatgttc	tcagctctca	gcacatagta	ggtgctcagt	341580
tgctatttaa	taagtaacct	ctcacctaga	ttattgcagt	aatcccttag	ctcgggggtt	341640
cttggcctca	gcacatttga	catttggggc	cagataattc	ttcattgttg	tgggctgncc	341700
tgtctattct	aagatgttca	gcagcatccc	tgggctctgc	tcactacatg	ccaatagcat	341760
cctccactcc	tgaggtgcaa	caacccaaat	gtccccagac	attgacaaat	gtccactaag	341820
gggcagaaac	accaccatgg	ctgatcttct	actttccatg	ctcctgctca	cactgtctct	341880
gtgctgggtg	agagcaaggc	tctacacatg	taagtcaatc	tgtggcttgt	cattgactca	341940
gagtaaaatc	cttacagtg	ctgtaagacc	tctctcttct	ctcaccttat	ccctccccac	342000
tgtctctctg	tctcaggccc	actccctgtc	cactcctctg	acacatcagg	aagccccagt	342060
gcttccacac	ttgctgtccc	ttatgccaga	aacaccttac	ttctggacac	ccacatggaa	342120
cttctcaggc	cagctctact	tgccaccctc	ctcctgtaac	acatcatcct	cctcctcctc	342180
ccctctgcac	tccacaatcc	cctaccttgc	ttctgtttct	ccatagcact	gaccacctct	342240
taacagacaa	atgagcctag	gatgggtgct	tgcagggcac	agactcacia	aacgtctgtc	342300
tagtgtgtgg	taaatggaca	gtgggtgtat	acagaaggct	tcactggcct	ccatcctctg	342360
tctttggcta	tctctgaatt	cgtatcaagt	cacagttggg	cctatttctc	cctgacactg	342420
aatgtatgaa	cagaactcaa	caaattggtat	aaaacaaacc	aacataaaca	accaaatgcc	342480
tcacatggac	ctcccagaaa	ccagcttgga	tgcgtcctct	ttgtgtgtca	ggcttggggc	342540
tcagtttggg	gtttgcagca	gagcctagtg	atcagggctt	agagtttgaa	gttgaattgc	342600
ctgggtgcaa	accctgactt	cctcacttat	ccccatgtgc	ccacgggaag	ttacatttcc	342660
catttgggct	tcattgttctc	atctgtaaaa	tgggataata	atacggcaga	attctcaggg	342720
ctactgtgag	atttagagaga	aaaagtgtct	aaaagtgtct	aggcctgcag	taaggcctga	342780
gtctgtctgt	gtttagtatt	attactagcc	atgtatatat	gctgtcttca	cgaggatttg	342840
gtgcctgggtg	atatgatgaa	gctttgaaag	ttcctgcaat	acattcattc	ctcatttatt	342900
gaaagcctac	tatgtgccac	actctgttcc	agggactggg	aatatgggtt	aagaaggaca	342960
aataggaact	tacattcttt	tttgaggata	cagacggtat	acaaataagc	aaaaaattat	343020
caggtcatgg	taagtgtctg	gataaaaatg	ggtgatgaga	tggagcagaa	aagggaaggg	343080
ggttgtttta	ggtttcatgg	tcagtaaaag	ctgttccgaa	aggccacttt	tcagccatga	343140

cctgagtgac	aagaggggcaa	cagccaggca	aacacctgca	gcaagaat	ttcaggcccg	343200
gtactcagtg	aatgaggaac	cctacgtggg	gatggagctc	agtgtgtttg	agaagcagaa	343260
agggggccgt	gtctgtgggg	tgggatgaga	gtgggtgggag	aacatggtca	gaaggcctga	343320
atcctgtgca	tcgtggaccg	acggaagggg	ttgggacatt	tttgaacagg	caggggaatc	343380
actggaaggt	ttacagctgg	agaatggcat	ttcacaagga	tgtctctggc	ttctgggtgg	343440
gacaaaggct	acagagaggc	aagcataaaa	atagggctgc	ctggctgggc	acggtggctc	343500
acaccagtaa	ccccagcact	ttgggaggct	gaggcagggtg	gatcacctga	ggtaaggagt	343560
tcaacaccag	cctggccaac	atggtgaaac	cctgtctcta	ctaaaaatac	aaaaattagc	343620
tgggtgtgct	ggtgggtgcc	tgtaatccca	gctactgggg	aggctgaggc	aggagaatcg	343680
cttgaaactg	ggagggtggag	gttgacagtga	gtcaagattg	tgccactgca	ctgcagcctg	343740
ggtgacaaga	gtgaaattcc	atctcaaaaa	aaaatagggc	caccagtggg	agacaatgac	343800
aagtaacctc	gtgagaatgg	gggtgattgt	gtcagagggt	ctgccactat	gtgcttattg	343860
ggtacagctc	tcagtcacct	tattacgtgg	gcatcacagc	accagccagg	gcgaggggac	343920
aagtgaccag	ccagtcctcc	cgaccagga	aggggttggc	taatcccttt	agcatccttc	343980
cctttttttt	tttttttctc	actatggagg	tttcatgtag	acttgtgatg	tgattagcgc	344040
aggaggaaaag	ggtgaagcaa	gatccccctta	acttctagaa	ttttctccca	cgattcctag	344100
aactatcaag	aaaataagca	aaaattgtgt	tgaatgtgaa	gagagaagag	cagtgtcagt	344160
aacaaaggctg	accgagcatc	catgctgctg	acaactgtgt	ttatgccagc	tttatgcagc	344220
tgataggaac	tgcattgtgaa	tgatgtttaa	gactcttgaa	caaaaagcacg	tagagaatat	344280
ttcctaggggt	gaaaaacaga	aaggtccctt	gtgctcccat	tctgttaactc	ctattatgaa	344340
taaaatgggtg	tgtttcacat	ttaataaaca	gttgcctgggt	tggatggatt	tcctttttgt	344400
atccagtgga	ctgaagggtca	aaaggatatat	ttttgtgttt	ttttttctgc	tctaatttac	344460
acccgcattt	tacagacctg	ccatttccaa	gcttagaata	cttcccataa	tcgaggaaaag	344520
aggccagatg	aagtggctag	aggctcctcg	cctctgggac	attcagaaga	ggcaactgac	344580
ccctaacaga	aggacttgag	tccctgaaac	agtggccttt	aaccaacca	tgccactatc	344640
tccccttttg	tccatacaag	gtcacttgct	ggacagcctg	gcttaggggt	gtcagatcag	344700
acacgggata	cccagttaat	ctgaatttca	ggtacaagat	agtttatatta	gtataaaaaat	344760
gtcccccaata	ttgcacaggc	agatgttcgt	gotttatctga	aattcaagtt	taactgggca	344820
ccctgtatatt	ttatttcccta	agatgacaac	cactgcccgt	ggtgggggta	gggatgaggc	344880
attcccagca	gcaggagccg	cttacaccac	acatttgcgt	cctcccaggc	ttgccctgtg	344940
ctggtctcct	gctcttctct	agcaagtggg	acttactgac	acataacaag	agagggttgt	345000
cactgggtatg	agcagccctc	tctccttgcc	taatttttta	gtgtctcaat	gagactccta	345060
tgtccatggt	aggacattct	ctccttcccc	tgcccttatag	tagaaaacct	ccatccagcc	345120
atcatcacct	atccactcat	ccactcacct	gtctaccacc	ccacccatcc	atccatccac	345180
ccaccaccn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	345240
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	345300
tttaagtacc	agacaccatg	cggcaaattcc	ataatctccc	tgagaacatg	tcatatgaaa	345360
gattcatggt	ctgacttgga	gccaattttac	tgggaaccct	ccagaccaca	gaaagcagct	345420
atcatgatga	acagagtagc	tctgaccag	tatctctggg	ccagcccaac	attagccaag	345480
ataactcaga	tgccaccagt	tgccctgcaa	ccaagctgac	ctatgagatg	tggtacaggg	345540
aagctgaagc	tagacaggac	tgtcctcag	tatcagttag	ggaaggctaa	ttgcaggaac	345600
aaatagacct	caacaacatg	tataatcaca	gtggatgttt	tttcttgttc	agatcacaaat	345660
cctggcagggt	ggagaggttg	gtggggcagt	tctcctcagc	acatccaccc	agggactcag	345720
actgtggagg	ttctgctgtc	ttcatcaggt	cacttccaag	gtcaccaccg	ggccatcagc	345780
agaagaggat	gagagcttgg	tggcatgcat	ggcagacttt	gaaggacagg	actggaagtg	345840
gcacgcaccc	cttcatcact	ggctgtgcta	cattgggtgag	ccacgtgggt	actactagtc	345900
acaaggaaga	ttagagaatg	caggccagg	aagaaggtag	ggacgtggat	ttgttttaact	345960
tctctgagct	tcagtttctc	catttgtgaa	ataccccatt	gattgcctct	caaagccaac	346020
tggtaaaaatc	tctgcctgaa	cccactcctg	gcaagtctga	caaagtcccc	agggtgttct	346080
ttccgaggat	caggtccttc	ctccaaccca	gcagacactc	tgagggttaaa	ggaaaactaa	346140
ttcctcttcc	atttttccat	ctggcctgct	tcttgattct	tgccctcctc	acactggcta	346200
ctgaaaacga	agccacttca	tttcatggat	gtagttcatt	tctgtctggt	tgctttggat	346260
cttggatgcc	tttctccatg	aaagcaaccc	taagcagggt	ggcttttatcc	cccagaagtc	346320
cagcccccat	cctgtgggtc	caggtgtctt	caagggtggg	ctggaggggag	gtgctggccc	346380
ctgggcagtt	cccatggcag	cctgtgagca	ggctccagca	gcaggagagta	agggcagagc	346440
tcagggaccc	cagcgaaggga	tgctctgtga	gtggctgggt	cccatggcaa	ctgaggagca	346500
acctccacaa	cagctaggaa	cccagtcact	ccagtagaaa	gctgttggga	agctcagcgt	346560
ctggaagcct	ggagtcacct	gtggctgcag	cctggagctg	aacatctttc	aagctgggat	346620
atttccatta	ccagcatgcc	ctgaatagct	ctatttccgt	ttcctcaaaa	catttcttga	346680
gcactctgat	gccccactct	gtcatggcta	ctgggacccc	agcaataaga	agtactgac	346740
cctctcctgg	caggtttccc	agcctagagg	gtgagctaag	cacgcactta	cgacacggag	346800
ggataaagcc	catctcacc	cgacagggaa	gcgggtgggca	ggaaagcctc	gagtgagtg	346860
cccagcagcc	acagcaaggga	caaggatgat	gagtagggag	tgggcggaag	ggggaggttt	346920
gggcgaagca	gtgaccacag	cacatgcaga	gtcatagaga	gaaactgcaa	aacacttttg	346980
tgatggggcg	atcacccata	ggacctcg	ttacgtcttg	ggggaggtgg	gccctcaagc	347040

FIG. 6K4

cttctcagag	aggggcattg	gaggaagatg	agtccaacgg	atccatgaat	attttaaaaa	347100
aaattaacta	gctttatatt	tcttggattc	ataaaaaggg	aaggaaaact	caggaacatt	347160
tctctaatac	ttggcaaatac	cagcccacta	gcaagtcctg	tctacaccct	ccaaatgggtc	347220
agggtttgt	tctggccttg	aggctaaagc	tgggatccctc	tgaaaagggg	ggaactttac	347280
atttattctc	aaagtgtaca	acaaaggaca	ttcccttctt	catccctctg	taccatgcat	347340
ccttccctga	gacaggaatc	cccatcctac	agctgtcctg	gtctacaagg	cctgttcttc	347400
ctccttctc	catgcagcct	ggcaccacaca	ttttaagcct	caggcctgcc	ttaacatcca	347460
ggtgtgcatg	ttcccgtag	aggcgacaca	ctgttcttgt	tttagcactg	agagtctcac	347520
gtcctggggg	aaaatctcag	gacggagagg	aaagactcag	cccggacct	caggccccag	347580
gacgctgggt	ggcagcaggg	atgagggagg	caagcctggc	tttggtgcca	ggcctgcccc	347640
gccaaagctt	gattttctcta	ctaggctgtg	gcatcttgat	gttaacttaa	attttttgag	347700
cctcagtctc	ttctttacct	gttgcaagg	acaaggaaca	cctatctcac	aggattgtaa	347760
ataatgcatg	ttgaacactt	tcacataaga	agtgtccaat	aaatgatagt	tagtactttc	347820
tagagaaggg	gcttccaaca	gttgcaatgt	catgtagtaa	aagctgtatc	aagcttttac	347880
atcgaatgcc	aagggccag	aggaggagca	tatatcttcc	gtgggaggcc	agggagacct	347940
gactttgtca	ccagttgctt	acaagactcc	ctggtgtgcc	tcttacacat	ccactgtgga	348000
ctgtgattga	aaattggagg	aaaaggagg	acaggagaga	aaattctgag	cagcaggaga	348060
atttggggcag	tgaggttaaca	gagacaccca	gtgtggggaa	agtacacccc	atttctgaac	348120
tccggtgcag	ttcatgtagg	ggaagaacct	gtaggtgggg	gattctgaaa	tctgcaagag	348180
tctgtctgca	gaaagctggg	tttcccagta	ggagggtaca	ggcattctag	aattctcaga	348240
aacttctgga	ccattctagt	ctattctgga	atgcactccc	tgtgggtgaa	gccagaaggc	348300
agagaggagt	acacaggaat	tctatattgtg	aggacaagat	tggggctgct	gacctgtttg	348360
tgagatgccc	ctctgaggag	gaccacagca	gctttggaat	taagtctgga	gagatctgta	348420
cctctaagga	ggccaggact	gcagacagt	gagcaaacct	cccctaagag	agcagccagg	348480
cctcatctct	gctgtgattc	tttgctggga	aagtctgaag	aatattaaat	gtggaaaatc	348540
agtatcttct	tgtcctcctc	tgtagctgat	gtctcccttg	attgtgctga	agttgtggga	348600
aggcgcatth	ctttcttatt	caggaattgc	agctccttga	tgccctagtt	gtgtcagggc	348660
ctccatgaag	caagtccctgt	gctgagagt	ttcccatttg	acagtgcgc	caaagcaagg	348720
atgtgatgag	caggccccct	ccaccgaaga	acgctccatc	cctgggacca	atggctgtga	348780
taatgggtgct	gggggacaca	gggctggaaa	atacagttgt	gcattcaggg	agcagctggg	348840
tctggtgcca	ttgtcacatc	taccaagaca	aaatgggtgga	gaattaaata	ccagccacat	348900
ttcccttccc	agaggtgtgt	gaggaggcag	cttgtcaaca	agggtaggtc	tgactctgct	348960
gtcctctgga	gactagaaca	aatgtcctat	cttcatttct	caattgcaga	caaaaatata	349020
cttttcttgt	caaccaagaa	cctggaatgt	gccctctgat	gattataggc	agaatccaca	349080
ttccagagca	tggaaccag	gccccatgct	tgaatatggt	gtccaggctg	gccattgagc	349140
cattttctag	cggtcacctc	cacaatagtc	taatatcatc	acctgggcca	catgtaacct	349200
ctttcactgc	tgtcttatgc	tttggggact	accggttagt	gacaatgatc	tgctggcatt	349260
taaaatctga	gtcccataat	gctgaaatct	ccttagcagt	ggcatctcat	cagagcttca	349320
tctcaccaac	acggccctgg	cagcaggtgg	agagtggctg	tgcatgcttt	gcatgtttcc	349380
atgcacactt	cagggcctta	gcaaataata	taacttccta	agtaggacct	aaaaaattca	349440
ggctcaaaaa	aggtgtgggc	ttgtgttaca	acagatggat	tgaatgacca	ggtaaatctg	349500
ctgcagagag	cagaaatcaa	cccccttat	ttacacctat	ctgatgttat	ggttttcttt	349560
tgtttttgtt	ttttttttga	gacacagtct	ccctctgtcg	cccaggctgg	agtgcagtgg	349620
cacaatctcg	gtcactgca	agctccacct	ccgggttcca	cgccattctc	ctgtctcagc	349680
ctcccgagta	gctgggacta	caggtgccc	ccaccatgac	cagctaattt	ttttttttgc	349740
attcttttgt	ttagtagaga	cagggtttca	ccatgttagc	caggatggct	ttgatctcct	349800
gacctcgtga	tccgcccgc	tcggcctccc	aaagtgtgta	gattacaggc	gtgagccacc	349860
atgcccagcc	tgatcttatg	ttattgtagc	tgtgttatca	ctgggcttta	ttatgtttca	349920
aaaaaaagat	gtcatttcta	ccaagtgcaa	aaacagcaaa	gtgtatctgc	attttgcaga	349980
ggcagttggg	gtgataatga	gagcgagagg	agatctggat	gcaggcagg	catggtttga	350040
gccaaggagg	aggccctggg	aaaagctctg	tctgttcaga	tgctctgacc	cccataccac	350100
acccctttcc	ggtcattcca	ctaaagcatc	cgtgtatggg	ggaccaggct	gcctccgggtg	350160
catatgtgca	gaaccctggg	gtcaggcagg	cggggtgcca	agcctccaag	aagggtgggg	350220
agcccttggg	acccgtgctg	gacgcccctg	ctcccgaggg	cctgctgggg	agccagcagg	350280
cttctggatc	tcattaaggc	acagcagccc	tgcagcctgg	acaccatag	cagagcatgg	350340
gcctgggtcc	catcacttga	gtgtggactc	tgccataaat	catcagaagg	cacattccag	350400
gtttgcagtt	taagagaaaa	gtatactttt	gtcctcaatt	gaggagccat	tctgttgaaa	350460
gtattagtg	gttccgaaga	ttagcaacat	tcctccgtgc	tgcnnnnnnn	nnnnnnnnnn	350520
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	350580
nnnnnnnnnn	nnnnnnnnnn	nnntctgttc	aaagtattta	agtggtttcc	gaagcttagc	350640
aacattcctc	ctgtctgcat	ctgacctg	agttttgatt	ttcaaggtag	gccagcagga	350700
ttcttgagg	gaacacgccc	cccaaccccc	catctgaatc	tgccctgagag	ctaacaagt	350760
ccaatgtggc	cagatgaatg	tgtgtgcgc	tatttgtgat	ggagggtccc	agagagcctt	350820
tgtgtctag	atctttattg	gaacaccgc	taaatattgg	actcaggctc	cccattgttt	350880
tagttaggg	cttaaatgca	gtctccttca	ggctgtcaat	gtacctttga	ccaaattgca	350940

FIG. 6L4

gcttgcatcc	ccataccaaa	tgtgggttcc	cagaacccca	gctcaactcta	acagaaccag	351000
ctgggaccag	agaggggtcc	ggtttgctct	ttgtgtgcac	agctgatttc	tcaaagcact	351060
aactcacttt	tctctgtaca	taaagatgac	actggggaca	cctgtcatca	gggatcgggg	351120
catcagctgc	acccagtcag	gcacccactc	accacagtga	gactttcaaa	gccagctggc	351180
taaggcttgg	gaggtacccc	cagggcaaaa	ggacagcttg	tcgttgagtg	aagtgaaccg	351240
cctttaacat	ttttataggt	tatagcctgc	ctaggcagca	gcaaccagct	atttgataac	351300
caaggggggtg	accagatttc	tactggccag	ataaccagaa	aactaaggct	tctgcattac	351360
accgcttcat	aagagaaaat	aagcatttta	gctacaggga	agccctgttg	tttttgaaag	351420
ctggaggagg	tcctcctgct	ggccatgggc	ttggctggcc	gtgggctagg	ctgactcaca	351480
gtcagagagc	agcctttgtg	gctgagctca	gcggaaactca	gcggacaccc	gcacgggtggc	351540
ccagggccag	caataaacia	gtcagggctg	ctcctggcgc	tcaggaaatct	ggggtcaatt	351600
agggatcaat	gggtgccagag	gattttaaaac	aattgcaacc	agccaggcag	gctcaggctg	351660
tatcaacagt	gaaatgcaga	atgtgcagat	acaattgtac	tatccctaaa	ttaaattaac	351720
gttctacccc	tcggcaaggc	atttttctta	ataagtggga	ttgctcctgg	ccaagcttta	351780
accactaggg	atggcaatga	ccgatgacct	aactcgtcac	ttaaccttgg	ccaaggacac	351840
caaaacccta	gtcattaggg	gacccatctg	tgaacctctg	ttgaacaatg	aagtcaaacc	351900
taatctgatt	tcaccacac	cttacatttt	taagtgcgaa	atttccacaa	ttctctgact	351960
gacaagaaca	tgaggtctat	ttgataacca	aggcaatga	caggatttct	tttggccaga	352020
taaccagaaa	acgtaaggct	tctgtattac	atcgcttctg	gagagaaaat	aggcatttta	352080
gctcatcatt	tcctcttctg	atttctcatt	gttgtgccta	cctggcacaa	tgtaaactct	352140
atagaaaggc	tgacttttta	aaatttttgt	gggtacacag	taggtgtata	tatttatggg	352200
ttacatgaga	tatttttgata	caggaatgtc	atacataaca	atcacagcag	ggtaaatagg	352260
gtatccatca	cctcaagtat	ttatcctttg	tgtttcaaac	aatccaatta	tattctttta	352320
attatttttaa	aatgtataat	ttaaattatgt	tttactatag	tcacctgtgt	gtgctagcaa	352380
atgctaggtc	ttattttcttc	tttcttttga	cccatgaaag	gttgaatttt	taactgcggg	352440
catcagtgac	tgctaaggat	ccagcagaga	gggcagtttg	actcaaagag	gtgaaaaaaa	352500
tcagtgggggt	cttttgatca	tcaggaatca	gaagcaactg	gaggcagggg	cccggaacc	352560
caggcagggc	cactcaggag	aatgacagaa	ccctccagg	cctccatgca	tgacaagctg	352620
gtatgcacac	catttggttg	gcttctctgg	tcagaattgg	tcctttgtgt	ccctcttacc	352680
atctttgaca	gaactgcctt	tggtccccag	gctccagcaa	tgtgggtctga	atgggggttg	352740
tctccctttc	tgtgtctcca	cctctctggc	catagtcccc	ttgagggagg	acaccaacc	352800
agtcacggct	gatcagggtc	tctccctgag	atttatttgt	gctactgctg	gtgggggaaga	352860
aatgtttctt	ttttggctgg	gcgcagtggc	tcatgccttt	aatcccagca	ctttgggagg	352920
ccgaaggagg	tggatcacct	gaggtcagga	gtttgagacc	agcctaacca	acatgggtgaa	352980
accccatctc	tactaaatac	aaaagattag	ccagtcattg	tggcacatgt	ctgtaatcct	353040
agttacttgg	gaggctgagg	cagctgaggc	aggagaattg	cctgaaacct	ggagggtggag	353100
gttgacgtga	gccgcaattg	tgccattgta	ctccagcctg	ggcaacaaga	gtgcaactcc	353160
atcaaaaaaa	aaaaaaaaag	aaagaaaaga	aagaaatgtt	ccttttttgg	ggaggaagaa	353220
gaacctcgaa	gctgctgggt	gtcagattgt	gtgactgctg	gggaaaaggg	tcacacaacc	353280
tttggtgaga	atgaagccaa	aatacagaga	gaagcatatg	gcagacaagc	tggaaatgtt	353340
ggtccaaaga	gtggctcccg	aggctagagt	acccccacca	gcatgaacca	ctgaaccaat	353400
gagcttgctt	ctcttcttgt	ccaagtctat	gcagcgtttc	ttgatatgac	acttggtaat	353460
gatttcttag	cattctatat	gtcatgttac	tattatttct	gctgtacaat	tttgggtaca	353520
ttttggcagc	taagtaactca	ttcagatcag	cagctctcca	cacgtcaggt	tggtctggga	353580
agcaagcttg	gaagaccagg	acgaagggtg	ggcatagact	ttgaggcaag	cttcgtagac	353640
tatcataggg	gtttgcttct	tactatcaga	atcagcact	gactcattta	taaacaggga	353700
gcaaaagaag	tgttattttg	atttgcaact	gttgaaacat	tgattatttt	ccaggaaagg	353760
ctataggcag	caaagagaga	tcaacctgag	atgacttcat	aatctttgtg	actacagggg	353820
ttgtcttctt	ttgggggggt	cacaaccatt	aacttccatt	tccaatgaag	agtaggattt	353880
acaccagatc	aaatatccct	gttcttttct	atctatctat	aaacctaaat	tgagttcaac	353940
acatacataa	cacctgagca	tgtgctatgc	tggagacctc	aaggcagctc	ctggcttacc	354000
agacagaccc	attggtattc	ctagtgtgatt	tcatccctatt	agttgaaaac	ccttcagcag	354060
accccacaa	ggcactcaga	atacagttgt	tgctagaagt	agctctcaag	gtcctatgtg	354120
atcttccgca	ccacgcagta	tcgcccctcac	ctcccctggg	gcccagtggg	agctctgtgc	354180
tctctccctc	cccacactct	tgctcctctg	gaggataggg	tcacacccag	aagcttcttt	354240
cctcagcccc	accccaacta	tctataccct	actcaccctg	gaggggtcca	ctccagttccc	354300
tccttcttaa	aaccttcccc	aagtcagct	cttatacatc	tttctggcag	aatttccata	354360
acatttgttt	ttgaactctc	tcagaaaagg	acttctgtga	ttatttttaa	ctgtaacctt	354420
gctgggcaca	atgtctgtct	ctgtaacccc	aacatttttg	aaggccaaag	tgggcgggatt	354480
gcttaaagcc	aggagttgga	gacctgcctg	ggcaacaaag	caaagcatct	ctacaaagaa	354540
taataataaa	ttactgggtt	tgatgggtga	cacctatagt	cccagctact	tggaaggctg	354600
aggcaagagg	atcacttgag	ctcaggactc	taaggctaca	gtgagtgagt	tatgattgag	354660
ctgtgattgt	gccactgcac	tcagcctctg	gtgacagagt	gagaccctgc	ccctaaaata	354720
aataaataag	ataaacttta	aaacaacact	gtaggctcat	catgtatctg	gttatttcta	354780
tccagactcc	tggagcctgg	cagtggccgt	gtcatgtgta	gggtgtccca	tgagtggcag	354840

FIG. 6M4

gaaggggctgt	tcaggggagca	ggggggagaat	gctgaggatg	gcagggggcac	agaggaaggg	354900
gaggtgacct	ccatctctgc	tgtaatcagc	ttcctgggtt	ctgtttactg	taggcagcac	354960
agccccttca	tcctgtgttg	ttctactttc	ttttctctctg	ctgtctttcc	attcccatgg	355020
gttttaataa	atacatacct	tgagacgtga	cagaatctat	ttccccaatg	ggcatctatg	355080
aggcatcagg	atgtggttta	gcgtctgacc	tagtggtggc	acccaaaggc	attccctgca	355140
aacacaagcc	tcctccctgg	tctcaaggat	ctcaatctct	gggcgatggt	gctggcaggg	355200
catcagggtt	ttaaaatggg	gatatcaact	ctcttttttcc	atagctacat	ttcccaactc	355260
tggcttcatt	ccctagttct	gacaccgagt	agctgtagaa	ctctgagcag	accattttaac	355320
ctctctgagc	ctttgtttct	tggtgacaat	aacagtctct	tctttggctg	ttaccaggat	355380
taaaagcttc	agtgaacgta	aagttcctag	cccagtgccct	ggagcttaac	gggcacacaa	355440
aaaatgtgcc	aactgcctgc	acagggaaaat	tctgcccaag	ggaagcttta	attacagtgg	355500
ctttctcttt	ctcccaattc	aaggatttgc	ttccaagaca	attaacagac	cacagaattc	355560
tgctacctat	cagccactgg	tcgccaacag	actcccaatg	ttggcacaaa	caccgtctct	355620
cgaagctggg	acacttagac	aggtgcccagc	ttgtggctcc	atggctcccg	gtgcatccgg	355680
atctgtgaca	gttacacaag	acgtgtgctt	aaatatattac	catgctcaga	gtctccccag	355740
cacgggtggg	ctcagaagaa	aatccaagaa	gcaaggcggc	tctggcatca	tccgctccta	355800
gcttggtgga	gcatatgtct	tgatggggag	tatcgtcaac	agactgggcg	acctgttgct	355860
ttaaaagctg	aacaataacg	atctcctctc	agactcagga	acaaataacta	ggcatatcag	355920
attgcttgtg	agacttaggc	aattagaatg	gttctgtgat	atcattcccc	tgagggtcca	355980
ggaactcccc	taagttocca	gtgtgggtgc	acagtgtgaa	acgctggagg	aggggagaag	356040
cagcagacat	gtttcagcac	cacctacgcg	tctgacatga	gcttttggtta	tctcattcac	356100
gctgcaggaa	cattgtctcc	attatcatta	tgattgtttc	tacttttacag	atagggaaa	356160
cagctcagag	aaggtgagta	atggaccoga	ggtcacacag	ctgtgagacg	cagggtccagg	356220
atltggctcc	agctactagc	ctgtagcagc	atgggcatgg	cccagtgga	agactaacac	356280
aaagatgaac	atcccagcac	ccttccaaaa	ggctctccaa	agagatgggt	cccacaaagg	356340
tgcaacagtc	tccaagattc	cctgacctca	ctgtacagcc	agagggtggg	aattccttcc	356400
cttaagtcag	ccctgatcct	ggtgcccccc	tgtacatttc	tcccactgac	aactgctcag	356460
ggaggttctc	cgccagggat	gtaaacagga	cagggtcaga	ccccaaagtgc	caagtaggta	356520
gccaaagggg	acagaggccc	tgtctagggt	acctgaaaca	cactatggag	gggctgggtg	356580
agagattcta	ctctccactt	ggatccttac	caggagcaag	gaggtaaaaa	gagtgaccac	356640
acacactaga	tttcacagtc	agtaaggact	gaaacctctg	atctgctgac	tggcttcacc	356700
aggagggata	tcctgggagt	cccaggcagc	cactggcagc	acccctgctg	tggaaaccag	356760
gattcctgca	cctgaaaggg	gagtcttctg	ggaccactcc	tggagcccag	gagggtctga	356820
cgtgtcaggg	gcccacagac	aggtgaagaa	accttttaag	cctctttcct	cgagtgaagg	356880
ccgacctccc	ctcaactccc	gcattagaca	ttctggtttt	gcaggagctg	ctgaggtggg	356940
cggtagtagg	gggagagctc	acatttcgaa	tgagcttccc	ttcctgggtg	tcttggtaca	357000
agtctgtggg	tgtattttga	aaactgctgc	tttccctcca	acacagcttc	ccttgctgtc	357060
tccttggaact	gcagcagcgt	ttcttacagc	cacgtggcat	ctcaggggaat	tctctggaag	357120
atgaggctac	accgaagtca	agaggcgtct	ttgtctgggt	cactgttgag	ctgtggaggg	357180
cctgtaaggg	ccagaggag	gccgttccct	ggactctgtg	caggggaaact	tctcttgact	357240
agaaatacac	ctgtcttctc	cgcccaaagc	ccaaagtggg	tggcctgggc	ttgcaaagag	357300
acgagcaggg	tcagggcgagg	atggctccct	gcagctctat	ggcctcgaat	ggggtaaagg	357360
actccctgga	ggcctgagta	atltgggcac	tgggaaaaca	gggtcctcta	tttctagttt	357420
tcctgtccag	agcaccocag	ggctgtgtgc	ctggccttgt	gggggcccgtg	accctgacct	357480
tggctctccc	taaggtgacc	actcacccta	gaaacaccct	agaaactcac	ctagaagat	357540
ttgctaataca	agctaactct	tgccacaaac	gcactctttg	aaggtaaaaa	agtcccctgt	357600
ggggcctcgg	gtcagagaa	cttcattgtat	agcccgtaga	ttcattaatc	cttccccagc	357660
ctctcggttt	ggctgcattc	tctttgggta	ccattcaaca	catagcactg	agcatctact	357720
gtgtttggat	tttgggggaa	gacgatgaat	gcttcagcta	ctaggacaaa	gaacaccgcc	357780
ccctgagata	tacatgctctg	ataaaacaat	cctgtgcgtc	tacacaacat	ttctgaatgt	357840
tctgaaaagg	aaaaataata	agctcgacag	gtgtgaggta	gtgattaaga	tattcacaa	357900
atltcccttt	aaaacaggaa	gactcctgat	ctaaaagagga	gaaacgtctt	tgctgtcccc	357960
ccgactccca	cttcaattta	aaactccatt	tgctttcttg	atcttttcagg	gttataaccg	358020
cgatctcaat	gactaataga	gtaaacatag	aggctccgtc	tttatgaagg	gaattaatga	358080
cttcgtaaat	ttagtgcttc	ctggatagga	gagggggagc	acttccctca	ggcttgacga	358140
ttccctggga	gggagggagg	gctgctccct	aaggaaacgc	ttccagcctg	ctgagagggc	358200
tcctcaccga	agcattctct	gtcaaacgca	agaaagccag	gcccacaaag	gcttaggtgc	358260
gccaaagatcc	gcccacttga	aaaaaaatac	aggacagaga	gctgggagcc	agggagaaa	358320
agatgcgtcc	acaaatgtgt	gtccttggca	caactggtga	aattttcaaa	tataaatgca	358380
gatttttaatt	gacaggccaa	acccacagac	agtccagctt	ttgtcctgga	ttagagaaat	358440
ctgtttgttca	caatgacata	aaatctttca	gaattatatt	ctttgttctt	tcaagctttt	358500
taggcctggc	gcagcatagg	gaaggagagg	gggggaaaaa	caccaaactc	tcaggacaca	358560
cattcagaag	gaggcaagtt	atltctactt	cttaggatac	gaggtcttgg	gtttccttgc	358620
tggaaatgaat	atlttataga	ataatggcat	gaaggagggg	aggtgggtgg	aagaggaaa	358680
ggaagggctc			ttccaggggc	ttctgcaaag	aagttttcct	358740

FIG. 6N4

gggtccactga	tgtttttctgc	ttcaaaaactg	ccctttcttca	gagaccagcc	atgtctgtctc	358800
agccccctctc	tccttgagaa	taccacagca	acagtttagc	aaattttcaa	agactgatgt	358860
ctttgaaaat	acatcagtc	catctggggc	ctcagaactg	ccatgaacag	acccaatgaa	358920
ttcattaatt	cttccccagc	ctcttggttt	ggcttcatta	attcattcaa	tagatagcac	358980
tgagcaccta	ccatgtctgg	attttggggg	caatctttga	gtttcaggaa	ttgaggcctt	359040
cgagaagtct	ctcaatactt	gtaatagcaa	gagcagccac	atatattact	taggggatag	359100
acgattatatt	cccttcccttc	cttcccttct	tccttcccttc	cttcccttct	tccttcccttc	359160
cttcccttct	tcctgtcttt	ctgtctttct	ttcccttttct	tccttctctc	tttctttctt	359220
ttttttctga	gacaggggtg	tgctctgtct	tcagggttag	agtgcagtgg	cacgattttg	359280
gctcactgca	gcctccacct	cctgggtcca	agcaattctc	ctgcctcaac	ctccagagta	359340
gctggaacta	cagattcaca	ccaccatgcc	tggctaattt	ttgtcttttt	ggtaaagacg	359400
gggttttcacc	atgttgggca	ggctgggtct	aatctcctga	cttcaagtga	tcagcctgcc	359460
tcggcctggc	aaagtgcctg	gattccaggc	atggggccac	acgcctggcg	atagatgaat	359520
ttttgagtga	ccctgccgtg	actttctcct	tgttccctga	taggttttga	aagcaccagc	359580
cagactaatg	aatgggtatt	gctgggttgc	aatactcttg	atggaaaaaa	gtttaaatct	359640
gtacctccct	ccctttttttt	tcaatcagcc	acctaagttc	tctaataaat	taataatacac	359700
tttctgaaat	tagaaaataa	aaaaagaagg	ctttgtgtat	tacatgcaaa	agagaaaagt	359760
ctagaagata	ctagtccag	gtgtctgag	caagggttaa	tcaaaaattaa	aggaaaagt	359820
aaagaagtag	tataggaaaa	tgccaccact	tggggaaggct	ggcagagaat	tttaaaatcc	359880
tcttttccac	aaaagattac	aggtaacaca	cattcatgag	tcctttgacc	caatgcaagg	359940
tcacagagag	aatgtatctg	acacctatct	tatttgtgtt	ctgctctatt	ccaaaaagga	360000
cttaaggtgg	tttgaagagg	aggagacata	aaataaaaagt	taaatatgta	ctaaaagcct	360060
gagcaaaaaa	gaaaggaaag	aaaagagtgg	caacataaaa	tagaggctgg	aacaagggtga	360120
gggaatttaa	aagcacaccg	tgccagggtga	tctgttccct	tcctgtgggc	cgtgagtttg	360180
gctctaggag	ttaactggga	aagggaacaa	gatgaatatt	aaacataaaa	gcagatcgat	360240
tgcttaggag	accactatct	ttggaatcca	ggaatggtag	gcctttctcc	tgccaggcctt	360300
tcaccaccat	ctgtataatg	tactaagcca	cagccctaata	agcataatag	catcctgtat	360360
ctgatgtggc	ctcaagcggg	tcagaatttg	gaactgtgga	tctgcttagg	acttcagttt	360420
ccttggtttc	taatctgtct	ccgaataccc	catatctggg	catattctta	tttgattcag	360480
gtctgtgtg	gtccagatct	gtaagactct	gccctgcaaa	cagacagtat	agaaaatatc	360540
atcagtgacc	atattattta	acctccacat	tatcaccac	atcctcatga	gtgtgagggt	360600
ccaaatggta	ctgataagaa	aagttagtaa	gaggcaagg	cacctgcagt	gtctggggta	360660
acagacacca	catctctgca	agccccagcc	ttcagcctgc	cagggtggagg	ggcagactcc	360720
atctgatctc	agaaaatttg	agaaccgtcc	aggcagcagt	gctcacacct	ttaattccag	360780
cactttggga	ggccaaggct	ggtgaatcac	ttgaggctag	gagtttgaga	cgagcctggc	360840
caacatggcg	aaaccccgtc	tcactaaaaa	atacaaaaat	tatccgggca	tggtggcacg	360900
cacctgtagt	cacagcttct	cggaggctga	ggcaggagaa	ttgcttgaat	cctggaagcg	360960
gaagttgcag	tgaactgaaa	tcataaccac	gcactccagc	ctgtgtgaca	gaaacagact	361020
ctgtctcaaa	aaaaaaaaaa	aattgagaac	cttcccaggg	cccacctaca	gttgactctt	361080
gagtaatgaa	ggcttttaggg	gtgccaatcc	ccacacagtt	taaaatctat	atacaacttt	361140
tgactccccc	aaactgaact	actaatagcc	tactgttgac	tggaagcctt	attgataaca	361200
taaatagtcg	attcacacat	attttgtatg	ttaatgtatt	atatactata	ttcttacaat	361260
aaagtaagct	aaagaaaaga	aattgtttatt	taaaaaatca	taagggaagag	aaagtatatc	361320
gactactcat	taagtggaa	tggatcgcca	tgaaggcctt	cagccttggtg	gtcttctgag	361380
taggctgagg	aggaggagga	agaggagggg	ttgggtcccg	ttctcagggg	tgccagaggg	361440
agaagaaggt	ccacctctaa	ctggacacac	acagttcaaa	cctgtgttgt	tcaagggtcaa	361500
ctgtacacgc	caccgagacc	agaatgggtg	gtttgatatt	tgtcagtgcc	aacaattcaa	361560
tattctatcc	tttagatggt	ttctcactct	ggtcacattt	aatgtgttta	attgatgctg	361620
tgtggaagtt	tcctcacggt	agaggataaa	taagccattc	cctttgatag	gagcctgggg	361680
ctttccctgc	gaggagggca	ctttggggag	agccttctca	ttagaggggca	attagccggg	361740
ctcccgccac	cgggtgccctg	agcgggggct	ctgagtaggc	agggcagacg	cgccatctag	361800
tggcagctct	caggacgtcc	acacgcctgc	tcctgctggc	tcccgcgcgc	tgggggtggca	361860
ggcacccggca	tgctagaggt	taacgaggag	gttccctcct	tcacgcgtgg	atgagccttt	361920
ccgtgagggg	gaccggaaag	gcgcctgggc	tggtgacggt	gtcaagtgtg	ggcaagaaat	361980
acggctgatc	aagaagcgac	ttcacctccc	tcgcacaaca	ctgagtcctt	ttgcccagag	362040
ggccctcccc	gccgcgaacc	ctacttggaa	ccttgcgcca	tgcatgtctt	ctctcattct	362100
aggccacgga	agccctgggt	caccctttca	gcctgggttt	ctccgggtgg	gctggcttgt	362160
ttctcctgtc	tggtgggggc	agctgogtcc	agcctcggct	cctgcaggat	tgccggggca	362220
accagagga	gatggggcgg	cgtggagggt	ctccctggat	gacccttccc	accattttcaa	362280
catcattagg	aatttaacag	gcttttgcga	gaaggcccag	gtacgcatcc	ccccatttat	362340
agtaggattt	ccaggacaaa	atgtattcca	ctctctaaac	aacaagcaac	atgtatacaa	362400
cccattcata	aggtaaagat	tcctttgcct	acacctagct	tctcctgccc	aagcatggcc	362460
ttgtcgttct	cttccccagg	tcaagttccg	gacctagcag	ctgggaatgc	acattttcca	362520
agttaagagt	ggaagagtc	cagcttggtc	tagatggagt	cacatatagg	attcaggttt	362580
gccttggcag	gtctgatgga	ccttgggtgag	gggtccggcag	cagctgtgca	cagcagctgc	362640

FIG. 604

ccaggggccat	gcagcaggca	ccgcactccc	cttccaggaa	ggattccagg	cccagctaca	362700
aggagcgtgg	ctactgacag	ctgtccactc	acagctcgtc	agactaagct	tcagctttca	362760
aaaaggactg	tgccctcctt	gggctggccc	aggccacat	aagagcaagg	cagtggccca	362820
aaggcctggc	atttctgccc	accacgggat	tcctctcctg	ggtggtctgt	gctccagagc	362880
tctctgtggg	gctggcttac	ttctcccttg	gccccccac	aggagtact	cagctatagc	362940
ccctctgcac	acataactct	atctgggagc	ctttcccgga	ggatgcaacc	taactgggtg	363000
gctcatccta	tagaagccag	tgtccttgac	tttttcagggt	gatgaacctc	ttttgagagg	363060
atgctgataa	ctgtaagcat	cttcccagga	tttgcacatg	tccagtgtta	gagtgcagggt	363120
cccccaaggc	catcccacgg	gccttcacag	ggagtccggg	tgaggacttc	tgactgaagg	363180
aggtggggag	gaggcgaaat	cggggaatga	ggaagatggg	gctgggggat	aataacaggg	363240
cttccggcaa	tggagaggag	ggttaattct	catttctgac	tcacagcgca	gcctcccattg	363300
agttcatgga	ttctgtggga	aaaaccacaa	gccaattccc	tcaagtgtcta	tgtcaggccc	363360
tgaggcagg	tggccggcgg	tggcccccata	tggctctggc	acaatgaggg	cttcagagaa	363420
cagagctgcc	tctgcctggg	gagtgccagt	ggcatcagca	gcaggggtgg	tgcccagtca	363480
cccatgtggc	agaggctggc	tgggcaccgt	ctcctctggg	taacatggtg	cccaccaagc	363540
cctggaagca	aggcctccca	gcacctttgc	aagcagcaga	tatcatctag	caatgtccag	363600
ctggatggaa	agaagataca	acagctggaa	agtggcattg	gctgacctcc	tccagaaagt	363660
ctctttccaa	aataattggc	aagggtttca	ggtgttagat	gttcttctact	gacagggtgga	363720
gaaggagcta	acaaaaaag	attgtgcagg	aatgagaagt	cgtatttagg	atgtacgaca	363780
gcagacacac	agcacacaca	cacacacaca	cacacacaca	cacacacaca	cacacacaca	363840
caccaggggg	tgttttcagc	actcacttat	attaattgat	ttaatccaca	tacagcctca	363900
tgtgctagct	cctattatta	tctcatttta	ctctcaaaaa	aactgatgca	cagaaaggtt	363960
tagcagcctg	ctaaagtcac	gcagctgaaa	agtggcagag	ctgggatctg	agccagggaag	364020
caaggtagca	ggtctgtgct	cttcatctcc	ttctatgctg	gctgtatgct	tgctagcggc	364080
catgaacttg	gaccttgggg	tgggagggct	ctgcgttcat	tcccagcccc	ccttgttact	364140
ggctgtgtga	tttcaggctg	gtttcattct	tctctttgac	tcagtttcct	caactgagtg	364200
taaaatgata	gtgatcctac	ctcataaaca	tgtgtgaggc	ttaaattgagc	taattatgta	364260
aaagatTTTT	gctgccacac	agaaaaatgc	ttagtctgac	attgaatata	tatgaaattt	364320
ttggatctgc	gccaccacac	gaactcagag	taggttcttt	aaataaaact	ctgcccagca	364380
ctcccaggcc	agcccagcca	ctgaaggcac	caagacagga	gccctgtgtc	cgctccagcc	364440
ctgaggctcc	ggaagccagg	caagagcatt	tcccgggtgga	ttcctggctg	ggcccagcct	364500
ggggcctctc	agtgtcctct	gtagccttgc	attttctatc	ttcaagggaa	gcttgagtgc	364560
tggagccctg	cccgccctct	cacattccta	ccagcgcctg	aaatcaatga	tgcccttgtt	364620
ctccttgaaa	gcgttgatg	tgtgggagaa	ggttgagggc	acactgtcat	ccgcgcaagc	364680
tgtctgaaa	gctggagggt	gcctgaaagg	ctggggagca	cccagtcctg	cataggtacc	364740
tcctgtctca	aatcagccag	atccagggac	tcacaccatg	gcacatcatg	gaggagcact	364800
ataagaggat	acccttctag	tgggtttcaa	agcacctgat	taatacaaat	gtaatcaaca	364860
cgaagctttt	ctactacata	ttctttgtgt	aaagccatat	gcactcacat	tcagaaatac	364920
taaagatcag	gtctagaaaa	atattcctac	aggcagaaa	aagagagagt	ccagttctaa	364980
acagagggaa	gggttgaa	agcacagtgg	gtgagggaga	gcccattgtg	gtgggagagg	365040
atcagggcac	aggtggatat	tgttttaaaa	tttggttagt	gcaaatggga	agcacaatgt	365100
aatttcaact	acaatttgcc	ttccatcaaa	taggatcccc	aaatactcaa	aggccttaaa	365160
tggaggcttt	tctttaacga	tctcaaattt	ttactttttg	ctaggcgtgg	tggttccatg	365220
ctataatccc	agcacttttg	gagactgagg	cgggcggatc	acctcaggcc	aggagttcga	365280
gaccagcctg	gccaacatgg	tgaaactctg	tctcttccaa	aaatacaaaa	actagctggg	365340
catggtggat	cgagcctgta	attctaaact	ctcgggaggg	tgaggcagga	gaatagcttg	365400
aatccgggag	cgggaggttg	tgggtgagcca	gatggcacca	ctacaattca	gcctggggccg	365460
cagagtgaga	ctccatctca	aaatatatat	atatatatat	atatttttaa	acttccactt	365520
ctcattttcag	aattcatgaa	tcttgtctcc	ttaatgtttt	tctgtcatgg	cacgggtatta	365580
agagttttgtc	ttcagagtat	ggtctcatca	tccaaatcaa	ctttataagc	cacagattcc	365640
tccattcaca	tcttagctgg	aggcatggct	acttctaagg	actaaaaata	gtcacgttgt	365700
cctgacttcc	ttttcctctt	ggcagaatca	gagcctgagt	catgtatgat	ctttccagga	365760
agaacatgcc	tttgactac	aagtgggtat	ttttctctca	aaaaataaat	ttgtataaat	365820
atattttttt	ctaacaaatg	ctgtttataaa	tgcaccagga	aaattttatt	tcaaaaaactg	365880
ccctaaagct	aacactttta	aattgtattc	ttgtttgttt	ttactcaata	aatattaag	365940
gcttatcata	tgccatgcac	tagtctagtt	gctttctctg	acctttgatt	ttagaacaag	366000
cacttttttt	ttcttttctt	gagagctgag	gtcttctact	attgtccagg	ctggacttga	366060
attcctgggc	tcaagtgtac	ctcctgcctc	agcctcctaa	gtagctgcga	acacaggtgt	366120
gcaccactgc	acctagctag	aacaaacaca	tcttttaaa	gagcaacta	gtttcagagt	366180
gttaaggtgg	aaagtggctg	gctagaggag	tggggctggg	ggtgtttcca	gagacagact	366240
cgctggggag	gcctttcaga	gcagatgaga	ggtgagccgt	gaatgcccag	gcagggccag	366300
ccacataaat	gtagagtagt	aaagttagtt	aggcagcagt	gcagcaagtg	caaaggcact	366360
ggggtagggg	tacaactgag	tgagcccaag	gaatagaggg	tggctgtggc	tggggcagag	366420
tgaggaaata	ccattaaaga	gattagcagg	ccaagtaagg	cggggctctg	ggtgccagaa	366480
tgagccgaaa	ggtttcattg	taaattgcct	gcagagcttt	taaaagtgtt	taagctagga	366540

agtaacttgc	tctgatttgt	ggtttataga	gdtcccttgc	tgtcaaggag	ttgctgcaaa	366600
acagtacaca	gaaaatggaa	cagtgaggag	gggtgtagct	gaaacgagac	tggccatgag	366660
ttgataagta	ttacagttgg	gtatctgggt	atatttttgtg	tatgcttgaa	aattccttaga	366720
acaaaagttt	caaaaataact	ctttttttttt	ttttttttttt	ttttttttgag	attgagtcctt	366780
gctctattgc	ccagactgga	gtgcagtggg	gcgatctcaa	ctcactgcaa	tctccacctc	366840
ccaggttcaa	ggaatacgcc	tgcctcagcc	tcccaagtag	ctgggattac	aggcacgcac	366900
caccacacct	ggctaattttt	tgttttttgt	attttttagta	gagatgggat	ttcaccatgt	366960
aggccaggct	ggttttgaac	tcctgacctc	aagcgatcct	ccttccgcag	cttcccaaag	367020
tgctgagatt	acaggcgtga	tccaccatga	ctggcttcaa	agtaactttt	tatacagcaa	367080
aggaaaaaat	ggaaacagaa	ccctttaaac	ggcacacaaa	caaaaataaaa	taatagccga	367140
acactctctt	tggtctctct	gtggagaaca	gatcatggaa	ggatgggtgg	gaggaggaca	367200
ttcagctaga	aggattttgc	aatagttcag	gcaacacatg	gcaggagctt	ggtctggggg	367260
tagcagagtc	ctgaagtag	gtgtgggatg	gtttggagat	gaagccagtt	ggacttgctg	367320
atggactgtg	tgttggggtg	atggagcctg	gggggtgggag	aggggattga	cacaagtga	367380
caaaggcaag	ttatcatctc	caaacgtgcc	ttttgccact	agatgggact	gtcatctact	367440
gaactgcatt	aactagcttg	attagctgga	gaaaagggtat	taatcatgtt	tttcattttt	367500
tgatgctttg	acatcttggg	tgtcgaacat	gaaatgtca	catgatggga	gggcccctga	367560
gtcatccctc	caaggaaaac	tgcattgacct	aaaatattca	tattgaactt	tgcattgagt	367620
agaaataaac	tttcagtggc	ttaatttaag	cttctgaggt	gtgggggtta	tagattccag	367680
caattggcct	attctgactg	atgcaactgc	ctgctccaag	tggacagaaa	tctcatggat	367740
aattgaaata	ataagtaatt	cccaaattgat	agtttagcca	gttaattgaga	agcaaattac	367800
tccttctgcc	tactgtatgt	taagggttgt	taatgaatat	caaaatgacc	agaagactgg	367860
gaacaaaagg	ggggaggaga	aatgaagggg	cttgaaaaat	gtgtttactg	accagccaag	367920
ccctgagaac	caatctatag	caatctatag	agggagctga	gaataagaaa	ataaacttta	367980
acatagttag	tcctgaatca	gttattcatt	cattcttttt	tttgagacag	agtcttgctc	368040
tgctgcccag	gctggagcgc	agtggcatga	tgtcagctca	ctgcaacctt	tgcctcctgg	368100
gttcaagcga	ttctcttgcc	tcagcctccc	tagtagctgg	gattacaggc	acatgccacc	368160
aagcccggct	aatttttgta	tttttagtag	agaagacatt	tccccatgtt	ggccagtctg	368220
gtctcaaat	ctgacttca	ggtgatccac	ccgtttcagc	ctcccaaagt	gctgggatta	368280
caggcgtaag	ccactgcacc	cagcctcatt	cattcaataa	gcatgtagcg	aacacctact	368340
gtgtgccagg	cactgtgcta	gatgctggat	atactgtgga	aaataaaatt	tacatggtac	368400
ctgtcctgaa	agaaattata	atctagttgt	ggagatagag	acaaaaatga	atgaatgaaa	368460
cagtaagtga	aacaactgta	agttggatca	ggggctatga	aggagtccga	ctaaggcttg	368520
agatagcaca	accaaggagg	attgacttta	atggggagca	ggggactaag	ggaagagaaa	368580
gtgcaggcta	caggcagagg	cagggtagag	accaggagtg	ggagagcgag	tggcagggtg	368640
agaagggagc	atgaggcatt	ctgggcagcg	ggacagcatg	tgcaaaggcc	ctgaggctct	368700
aaggctgtac	acatttgagc	agctgattaa	agaccagtag	gacagaagga	ggagggtgag	368760
gaaagtggca	taaaattagg	tggagaaaaa	gacagagggtg	gatcacacag	ggcctggggc	368820
acagtgaaaa	tgttgacttt	tattctcatt	tcagtctccc	tgtttcctgg	cctttctatt	368880
taaaagcacc	catcttcacc	ttctcccaaa	ggctctggaa	gtttttacaga	cagcatcttt	368940
ctagcctcgc	cctgcgtctc	tttctagtca	tttgaactgag	gctgaacaaa	gccagatggg	369000
gagtttcatt	cccttcacct	cccccaactc	ccagctgaag	gaggctggcc	ccagacacag	369060
gacacagctt	cctgaccctg	cgggcaggag	cctggcttgt	tggtagcggg	caggagcctg	369120
gcttggttgt	gagtgggcct	cctcatttgt	gctggagttt	tccatcctca	ttccacaaca	369180
agccaagtca	gcaagttgct	gccaggaacc	ttcacacctt	gtgctttggg	atctgagggg	369240
aaacacacac	accggcacca	ccctccctga	gcccgggaat	gaagccagca	tcagcgagga	369300
gcaacctact	gaggaaaaatg	atggagtaat	tccttgggca	cacttcaggc	gtgggtgccag	369360
gtaacaggcc	ctgccagggg	gtgacagagg	tggtagcatg	gcatgtctgg	ggcctgcccc	369420
gagacaccag	ctggcagcag	ccacactctg	tccttagcag	cactcgcagc	agtccaacac	369480
tttggttgtc	acgcaagaca	cgctgtttct	gacaggacgc	cgcagccggg	taaacacggg	369540
agatgcagag	ggcactatcc	tgcggcgctt	ttttgaaagc	acgccatttt	tcttccctac	369600
ccaatttaact	ttccagagac	ccatcccga	ggactggatt	catcactaga	accaacaaga	369660
tgaggatttg	tagagccggc	tgccgtgcca	ctgaggctcc	tagtgggtta	tctgcgtggc	369720
ttgctgacc	tcagcagaaa	ttcacagcgc	agggcccaga	gctgtgtgag	cacctgcaat	369780
tgaagaattc	acaattacaa	gtcatgtgtc	taaattggca	ggctttcaag	aaagtcccac	369840
caatcttcaa	gcatacagcc	gccaagggcc	acgtaaaaatg	ttttagcttt	taatatacag	369900
tttcattttgc	ttgaatatca	tcagcttggg	tgcagataat	caaagaatgg	ctcaggatgg	369960
agaatttaaat	atgagaattc	ggccagggtc	gccaaagccat	atatgtgcta	atgttgcaat	370020
ttcaaccttg	gacttaagggt	caagattaat	ttagtgaata	atattatttc	acgatgtaac	370080
agacaccttc	tgagttggag	agccgaggaa	ttccggagga	tggatgaggc	atgggtgtgt	370140
ctagagacct	catggcaaaa	gtggctgcat	tgccccctca	aatgttagtt	aatattttgg	370200
cacattttgag	agataacaac	atagggagat	ttttctttta	ctttctatta	tggaaaaatca	370260
aacatatgct	atattagaaa	gaacagtata	ggaagtggaa	aactttttct	ttacagggcc	370320
agatagttaa	taatttttgt	ttccaggcc	atatgttctc	cgctcaact	atacagctct	370380
attgtcacac	aaaagcagct	attgatagtg	tataaatgaa	tggtagtgct	ttctaataaa	370440

FIG. 6Q4

actttatttg	tggatgctga	catatgaatt	tcacaaaatt	tttacatggt	attaatagtc	370500
ttcttttttc	ctgacttttg	taccatttaa	acatataaac	atctttctta	gttcccaacc	370560
cttgcaaaaa	cagctgggtg	gctagagttg	gcccgcaggt	cacagtctgc	ccagccccga	370620
agtacgtaga	aggaccccc	gccccgaagt	acgtagaagg	acccccatcc	ccaacaccct	370680
gtttcaacaa	aagttagctc	atggccaatc	ttgtttcatc	tattctccta	tccttttttc	370740
ctctccttgg	attctttgag	gcaaaccctc	atcaacaaat	tatttcatcc	atattcataat	370800
ttcagtagct	atctctaaaa	gaggattcaa	atctttaaaca	aaaaactaca	atatcatgat	370860
cacatctaaa	aatatataca	attccataat	atcatcaaat	atccaatcaa	tattcagttt	370920
ttccaattgt	cttataaatg	tttattatta	tataattttag	attttttccc	ccattcaatt	370980
tatttggttg	aatcaagatc	taaataagat	caatatgttg	caaataatatt	gcaattgctt	371040
gatagatctc	ttaagtcttt	gttggtgttg	cggtgttgga	gacaaggtct	cactctgtcc	371100
ccaaggctgg	aatacagggg	gccagatcat	ggctcactac	agtctgacct	ccttgggctc	371160
agatgatcct	cccacctcaa	cctcccgtgt	agcctggatt	acaggtgtgc	accaccatgc	371220
ttggctaat	tttatattct	ttttagagaga	tgggatttca	cggtgtgtgc	caggctggtc	371280
ttgaactcgt	aggctcaagt	gattggacct	cctcgggtctc	ccaaaccgct	gggattacag	371340
gcatgcatca	ccatgccag	cttcctaagt	ctcttttaaat	ctgtgagttt	cctttcccac	371400
ccacacctct	tttgtacaca	ttatttggtg	aagaaattgt	gtggtttgtt	ctgtaggatt	371460
tcctggagtc	tgggttttgc	tgattgcac	tctgtgctgt	tattggatgt	gttgtttgtc	371520
ctctgtattt	tctacaatac	aacagtattt	tctgccaat	ggaaagttaga	gctaaatgtt	371580
tgatggcatt	cgggtccttat	tggtgtcttg	ttttttggta	agattacttt	acaggtgact	371640
gtgttctccc	atcagaaagc	acacgtgtgg	ttgttctct	ttttctgatg	ctagcagcca	371700
ttgataatta	tggccttagat	tcattactta	aaaaaattaa	tagactttat	ttttaaatca	371760
gttttgaatt	tataaaaaag	tgagcagata	gtacagagtt	ccaatatact	ccctttcata	371820
cacagtttca	tctataatta	acatttggat	tagtgtgata	tatttgttgc	agttgatgaa	371880
ccaatattga	tccattccta	ttaactaaag	tccattgttt	acattagggc	ttactgtttt	371940
atacggttct	gcagttcaca	aatgcgtagt	gacatgtttc	taccatgaaa	gtatcacacg	372000
ggaatagttt	cactgcccta	agaatctcct	gtgtccacc	cgttcatcca	tccttgccac	372060
taaaaccttg	gcaaccatgg	ggcttttcac	tatacctata	gttttagcctt	ttgcagaaca	372120
tcatatgggt	ggaatcatat	tgtaagcagt	cttttcagat	ttatttcttt	cacttagcaa	372180
tgtgcattta	cgattcctcc	gtgtcctttt	gcagcttgac	agccacagtt	tcctttcagc	372240
actgaaaaat	atctcattgt	atggatgtgc	cacagtttgt	tcattcagttc	actgagtga	372300
gaacatctcg	attagttcca	gttttcggca	actatgaata	aaacctctat	aaacatttat	372360
atgcagattt	ctacgtggac	ataagttttc	agcttaaata	ggtaaatatt	aaggagcatc	372420
attgttggat	tgtttgggtta	gaatatgttt	agcttttttag	aaactaccaa	actatttttc	372480
aaagtggctg	taccattttg	cattccttacc	agcaattgaat	aagaattcct	tctatccca	372540
atccttgaca	acatttggta	ttaccagttt	tttgggattt	gggocattct	gatagatgta	372600
taatgatgtg	ccattgttgt	tttaatttgt	atctacttca	cgacataaga	tatcaatgga	372660
atgtcttttt	tatatgttta	tttgctatct	atgtgttttc	tttttttttt	tttttttttt	372720
tttttgagac	ggagtctcgc	tctgtcgcgc	aggctggagt	gcagtggcgg	gatctcggct	372780
cactgcaagc	tccgcctccc	gggttcacac	cattctcctg	cctcagcctc	ccaagttagct	372840
gggactacag	gcgcccgcga	ctacgcccga	ctaatttttt	gtattttttg	tagagacggg	372900
gtttcacocg	tttagccggg	atggctcgcg	tctcctgacc	tcgtgatccg	ccgcctcggg	372960
cctcccaaag	tgctgggatt	acaggcgtga	gccaccgcgc	ccggccctat	gtgttttctt	373020
tagtgaagtt	tctgtctcaga	tgaaattgag	tttttttcoat	tgttgagtcc	taaaacttct	373080
ttgtatattt	tagatataag	ccctttgtta	aatatgcact	tgacaatatt	ttctcccagt	373140
ctgtggcttt	gtctgttcat	tctcttaata	gtgcatttta	cagagcagaa	gttttttaatt	373200
ttaataaagt	ccaccttccc	aaattttcct	ctcaccgata	atgcatttga	ttttgcatct	373260
aaaacattat	ccccaatgc	aaggtagccc	atattttctc	ttatattatc	ttctaagagt	373320
tttataattt	tgcattttac	agttaggcct	ataatccatt	ttgagtttag	ttttgtggaa	373380
ggtgtaattg	ctgtatctag	aattgttctt	ttgcatgtag	atgccagtc	gttcccgcga	373440
tatttggtga	aaagcttatc	ctttctccac	tgaattgcct	ttgtttcctt	gtcaaagatc	373500
aattaattga	ctacatttgt	gtggatctgt	ttctgttctg	ctccactgat	ctatttgtct	373560
attcgctcat	caatatcact	ctgtcctgat	tactgttagct	ttatggtaag	tattgaagtc	373620
aggtaattgt	agtctcttgg	ctatgctctt	tttcagttat	ttgttggctt	ttttgggtct	373680
ttcacctttc	catgaaaact	gtaaaattca	gctttttgat	agccacacaa	aaacttgttg	373740
gaattttaat	tgggattgca	ttgactctat	agatgaagct	gggggatatt	ggcatcttaa	373800
taatattgag	tttctttatc	agtaaacatg	ggatatcact	ccattttatta	agatctctga	373860
ttgttttcat	cagagttgta	tctgtttcca	catatagatt	ctatacatgt	tttgtttgat	373920
ttatatcaaa	gtatttcatt	ttttgggtgt	catgaaaatg	acatttatatt	tttttaattt	373980
taaattccaa	ttgctaattg	ctgggtttaga	tccattcatt	tttttaggact	tgcataatgg	374040
tgatattcta	attcttttct	tccctctcca	tttatttagct	gatagtgtct	gttaaaaaat	374100
cactctcatc	aactcttcaa	ttatccaaag	atagagatca	tttaggaaag	aaaggaaaaa	374160
tgotggatat	ttcccttga	ttttctagtt	ttttgaaagt	attgaattgg	ttcttcaaca	374220
tctccaaagt	tgaccaataa	gggtgtttat	tttttagtat	cattataaaa	aaattagaca	374280
catttcaatc	tcttgcattt	aggattcttg	ttgggtgctca	gactgacctt	ttgatgggtg	374340

FIG. 6R4

gagcgttttcc	cgttgacatc	tgatgtgact	ttgatagttt	ctttatttcc	ttaagttcat	374400
gcttgtctta	cacatgttct	ccccagacc	taataccagc	cattttctcca	aggagcctcc	374460
attcccttta	gtaggaaatg	ttgttttagaa	gccactaagg	tatacatttt	tgtcttttca	374520
gtggtcagag	gtaagaatta	aaatccattt	tatttttttag	gataaattat	atcttgagtt	374580
tacaatgata	agtcacttta	gaaatatgcg	gaatctcatt	ggttttgtaa	gtttttttct	374640
ttcttccatg	ctgaaattgc	tttatctccc	aatacacata	caaaccaatg	ttattaccac	374700
caatatcttt	actgaaaaca	gtttagattt	tcaagatttt	ttgtctagtc	cctgtcctta	374760
gagtatatcc	ctcaagaaac	atacaatgca	ataatggaat	aattttgttt	taaatttacc	374820
tggatatagtt	ctgtgtggtt	ataacatcta	gaagatatgg	agctaagttt	atttgtttca	374880
attgggttttg	attttaggaa	ctgctttttt	ttaaattaag	gttttaaaaa	atagttacac	374940
acattttgtta	cacacgtttc	gtattttttgc	cagttttatct	ttggaatgaa	tttctagaag	375000
tgggattgct	tcttcaaagg	gcaaattgta	atgtaattct	gctggatact	gccatatttc	375060
cctctgccc	agttgtacca	tttcaccttt	taccagcagt	gcctgatgtc	ccattctgaa	375120
ggtttctccc	ttatgtttgt	agagtgtgtt	agggactcat	taggattttt	ttaaaacata	375180
tctcactttt	cctggcaaca	gttctaggaa	ttaggtaatg	ttctcaccct	gactttatag	375240
atggggaaat	tgaggctcaa	aagagctgaa	gtgtactgca	cagaatagga	aacaagctga	375300
ttatagtcct	gattcctcgc	ttagccacag	cggatcctta	ggcaagacac	agagtccctat	375360
gtcttctct	agcatggctg	tgggccttcc	agttttgttt	tcatttttcc	agctggattt	375420
gcctctccca	cagagtccga	gatggaggag	tcccttggct	atttgattct	tacttattta	375480
acacatggca	ctaggcgaga	ggcatatggc	agtgaggatg	atgtttgctc	agtctggct	375540
gagctgatct	ggagtgttgg	tctagaggga	gtttcagtag	ttagacgttt	ccattggggg	375600
ctagcgtcag	gggtgggggag	tggaggtgct	gggaaaacaa	ccgtcggggg	agcttgaaag	375660
aggaagagag	gtcagaagag	gtttcctgga	ggaagtgaca	gctaagctga	gtcctagctc	375720
ctgagggtga	gtaagattta	gacacaccaa	gaggaggagc	aggggaaaag	aagaacctgg	375780
acagaaacag	gctcaaaaat	caggaggcaa	aatagagggc	atggggcatt	gaagaaattg	375840
aaggaaagtc	tgaaggacta	tggatttttag	tctgtgtgat	tgtagcagac	caaattgcag	375900
atggcttct	tagaagtatg	acaccagctc	ctggggaaac	agcttttggg	aatcaaaacc	375960
tgtgacatga	tgggtgaatat	cttaggtcct	accactttct	gtgcatgggg	ttatatgcca	376020
gaatgcctct	gacatacggc	agaaatggcc	ttttcttcac	atcttgtcat	ccccagctc	376080
ggtgcaaac	gctatagacc	accgacattt	acaagtgcac	gggtgcactag	gaaattctga	376140
atgcttgct	accagtttaag	gcaacataaa	aatacgcaga	ttagtgattt	gattattagg	376200
gcccgtatct	gaaaacagag	aggaagaaag	aaatgcgctc	aagaatccga	atttgcattt	376260
gtttactaca	acaaaaagtg	ggctgatgag	ttcatggact	gataattaca	ctacaccttg	376320
atcaacatgt	tctcagtggt	caacaacaaa	aaaaacaaaag	atctttgtcc	caggatccca	376380
tatatcctgg	gcttggctga	taggggttaa	tcaaattagt	gagcaagata	tatgagcaga	376440
gagacatgag	tgagcatctt	tgattctgta	caagtgaacc	atgaaaagaa	aacttctggg	376500
acccattccg	tctcaatctc	attaggaact	aagcctgtcc	cccaggggct	gtctcagcct	376560
gaccatgcca	atttgtccac	ggaggagtgt	gcgtagttag	gcacatgcag	gcagacttga	376620
ctcaaacttt	gtgataaacg	actttttttt	tttttttttga	gacagagtat	cgctctgtcg	376680
cccaggctgg	agtgcagtgg	tgtgatcttg	gctcactgca	acctctgcct	cttgggttca	376740
agcaattctc	tgctcttgg	gttcaagcaa	ttctctgcct	cagcctccca	agtactggg	376800
attacaggca	cctgccacca	ccccagcta	atttttgtat	ttttactaga	ggcgggggtt	376860
caccatcttg	gccaggctgg	tcttaaaactc	ctgactttgt	gatccaccgc	cctcagcctc	376920
ccaaagtgt	gggactacag	gtgtgaggca	cgcaccgcgc	ctgtgataaa	tgactttata	376980
aacaccagaa	tctgtgttta	tttgatggto	tgtcctactg	aagccttttt	cctaagggtt	377040
ctcatgtgta	gagcaaagcc	tttttatttt	tagctgttac	ggtcatagac	gggttgacac	377100
gcagtgaatg	ggtttgagcc	tgaaatgcag	gagcttgatg	tgaaattcca	tgactcata	377160
cagccccaca	ttccagagtc	attttccagg	aaccgcagat	tcattctgtt	ctctcccttg	377220
gctcatcatt	catgcccagg	acattgacga	ccatctagat	ggtgatgaat	tccaagttca	377280
tgtctccagc	ccacatctct	cctctgcata	tctccaaagg	tctgctcagc	ctcaccactc	377340
agatatttca	ccacatccac	ccctccagcc	tggcccactc	ctggtgaatg	gcacggcact	377400
cactaagtta	tgcaagtcgg	acgtgttggg	gtcctcattg	acgcaccgc	cccctcagaa	377460
atcctctcct	cagaaatctc	tctctctca	agtgcctgtt	tctttcacct	cctctgtaat	377520
tctcacttcc	acccttattt	tccagctgtt	cctacactct	gtttcctggc	ctcagacccc	377580
agccttgcat	gcctaagcca	gcttcataat	tggctcctct	ctattcaatc	tactcaccac	377640
aacacttttt	tatatgtaaa	tctgattgct	tctcaccctg	ttaaaacctc	tgggtcccag	377700
tctcctttta	gataaagact	gcatttctaa	gggtgctccc	aaggctccac	cacatcgggc	377760
cctgtctgt	acatatcctg	gctcctcgtg	ctcaggtgcc	cttgtccct	ttgcatagca	377820
tgtccaagta	ctatgtcccc	accaccagc	ttctggcacc	tgccgctccc	tgtgccatcc	377880
ctgcctcact	cctccttctc	gtctcaggca	tctccctctt	ttggtcacag	ctgcctgac	377940
cctcagccta	ggctgggtgt	ctggccacct	gctcttgaag	agccacttct	tccatgctaa	378000
atctcagccc	cgcttgggat	tattttattt	ttgggtgtcat	tactcagact	tcttgcgtct	378060
ccttgactag	actgggcctt	catgtgacca	ggggctgtgt	ctgggttttg	cactgttcta	378120
ctcccagtc	catccatggt	gcctggcatg	acatgcctgc	ataatacgta	ctcagtaagt	378180
gaatgaacca	actgactcac	ctacagaaag	gacctttgat	gtctctccca	actcatcaga	378240

FIG. 6S4

ataatccaaa	atagtcagct	ttgaagaaaa	aaggagattt	tatttgatac	cacaaagaat	378300
tctaacagaa	aagaatgctc	caaactcttct	aaggcacatg	taataggaag	gcaggtctgg	378360
agtgaatagc	ttgtcaagtt	aatgattagt	ttggtgtttc	ttttgctgta	ggattatgac	378420
aaatgtaaca	agactgtaga	tataattggc	cctggtgctt	tggccttacg	ttttacactt	378480
atcagttttc	acggaagtaa	atcttgaate	ctacagctct	catcaaattg	gatgctgaaa	378540
gtgcagtgac	atcatagcaa	taatgatgtg	gagtatttat	gaccgagctt	tttggtgaat	378600
gtgcttgtaa	tgcatcttct	gtttagtgtt	actagaacac	cagcataaatt	attgggctgg	378660
ttattttgtta	aaacgattta	gacaaaaagt	ttaggagaaa	attaggtgcc	atcgaatgat	378720
aatctgcccc	tagcagagga	tgatgaataa	atacatgaag	gtttgctccc	agtgattcag	378780
aactaataat	gaacaggtaa	taaacgaagt	tttcagttat	gcctacagag	aataagtgcg	378840
tccctctgagc	cgttcagacc	tctgaaacca	gtactgggtc	agaataggag	aaactagtta	378900
atttccacat	actgtgatca	cctcagggga	agctcagtcg	gatttttagaa	ctctcacaaa	378960
gaaattgaac	cctgggtgtcc	tggattaaac	aagagttaag	atcacagtga	gaagggaaga	379020
agcctgtgtg	tgtgtgtgtg	tgtgtgtgtg	tgtgtgtgtg	tgtgttggcc	aaggaagaat	379080
ttgcaggtag	attttaagcc	ttcagtttga	gcgcataact	ccattgacag	taatgggaat	379140
tgaatacgt	gccaaagaga	gaaaatgcaa	accagtcctc	agcacagagt	ataaattaga	379200
tatgtaaaa	aaaatggaac	gagggatttg	tgaggtgagt	ctaagagcag	gaagacatct	379260
tgaacatta	agaagcactg	cctattaaag	tctggagagg	actgagagat	agaacatggc	379320
acacacagat	ccataatcgt	cctctcaacc	ctcttaatac	tgacggacgg	agcattattc	379380
tctaagcagt	tcacgtaact	aaagaaataa	atatgctttt	cttgattggg	tttgtttgtt	379440
tattttatttt	tgtttttgag	atggagtcct	gctctgtcca	ccaggctgga	gtgcagtggt	379500
gagatcatga	ctcactgcag	ccttgacttc	ctgggctgaa	gcaatcctcc	tgcttcagcc	379560
tccagagttag	ttgggaccac	ccactaccat	acctggctaa	tttttaaaaa	attttgttag	379620
agatgggggtc	tcactatggt	gcctaggctg	atcttgaact	cctgatctca	ggcgatcctc	379680
ctgctttggc	ctcccaaagt	gctgggattc	caggtgtgag	acatcagact	cagcctgttc	379740
ctggtttcta	tgcttggaac	atcttatata	caaattggaca	tttttttgcc	ttgaattaga	379800
gacacaaaatt	gagcttaata	aggaaaggga	gtacattagt	taactccaac	tcactaacag	379860
cttcagctttt	ttaatatttt	aaataaagag	aaaactctct	ccttcatttt	ctttcatcag	379920
actgtgcccc	ttccataatg	gtaaattttt	attcattttg	gccaaatttt	gatcattttg	379980
actcatttag	aagggtcaagg	aagtagagtg	tgtcagggtt	atttattttc	cctataaatt	380040
ctccagattg	tctgttagag	ggatttatgg	acataagtcg	tacctacttt	tttagttact	380100
atatgocctat	accttttatt	ctgatttcgg	agaggggaatg	tctttgaaat	aatcctaaga	380160
gagtagctcc	caaaccaaga	tgattaataa	aatcacttgg	ggagcttta	aatatacag	380220
atccctggat	atcctatcat	atctactgaa	tcagagactc	tggtgggttg	agccaaggag	380280
aaaagggtccc	caggcatattc	cgatgcagtc	cctctggact	gacaacctct	ctcccaagac	380340
aatggcctga	aggaaatcat	tgcaagttca	tgttctagca	tgttagagga	aggaaagtta	380400
gacttgtgaa	gaaactaaat	atctccaagt	ccaattcaaa	ctcctttaag	tcaccagagg	380460
atttcaagtt	ctttctttgg	gggcaattca	ggtccagggt	gtaactgggc	ctttaagact	380520
tcagttttcc	ttgagtgggt	ccgggtagct	gcttccctgt	aggaacattc	tactctacc	380580
actctgctct	gcatcccaa	cccagggaat	ccttcaaggc	tcagccaaag	atcacctctt	380640
ccatgaaaac	agcaatgact	acatgagctt	tttctccctc	ccagactccc	ctgggctagt	380700
cagaggcgta	taatttaaca	cttaattgtt	ttctaattgc	ttccgatctg	ttctgttccc	380760
tcaccctatt	ataagcagct	caagggtgga	gaccatgggt	ctctctcagt	gtctttaaca	380820
aggctgggtg	cctgcctggc	tcaccattgt	ggccccagag	gcccaggctg	gcatgaaatt	380880
ggctctccat	gaatatttgt	tgaattaatg	aatttgtttg	tggaatgagt	attggaacat	380940
ttagtacaaa	aatcatggcc	tgaaaacaaa	tcacctcata	acatgctcca	ttctattcca	381000
ttcgaccaac	attgaatccg	taggtatggg	ggtcctcctc	tgtgctgggc	actgtctgtc	381060
ctaggtgcta	ggaacagagc	aaaaatgtcc	ttgattgatg	cactaagtgt	gaacttgtta	381120
aggagggtaa	attaaaagct	tttgaaaatg	gaattgcttg	gctgggcgtg	gtggctcacg	381180
cctgtaatcc	cagcactttg	ggaggccgag	gcgggcggat	cacctgaggt	caggagttcg	381240
agaccagcct	gaccaacatg	gagaaacccc	atctctacta	aaaaatagaa	aatcagctcg	381300
acgtgggtggt	gcatgcctgt	aatcccagct	ctcgaggagg	ctgaggcagg	aggatcggtt	381360
gaactttggga	agtggaggtt	gcagtgagct	gagatcatgc	cattgcactc	cagcctgggc	381420
aacaagagtg	aaactcagtc	tcaaaaaaaa	aaaaagaaaa	aagaaaatga	aattgctctt	381480
tcaactcctg	gaaactatga	aaaacagggtc	agagatcatt	tcaataacaa	ccatagctca	381540
gaaaacatag	gatgatagtc	cagtgccagt	aattgggtgt	tgcaagattg	tagttcaaa	381600
tagtccaatg	taggagacag	aaccacaagt	agaactgttt	ttcttccctt	ccagagcctt	381660
cctcaccaca	tattcagact	gacggaggcc	tctacaaaag	gggcattgtg	gcttgtttta	381720
atthttgaatg	tattttatgt	tgaaagttaa	gctctttggc	agcatgaacc	agacaggcaa	381780
accttacccta	ttggcccttg	gtgtcctttg	atgttttccc	atthcatgac	agaattctag	381840
agtcaagatg	tgaagacctc	acactaagca	agttgatttg	aaaccaccca	agacttggcg	381900
atthgtctaa	agaaataata	ttattaactt	tgcagaagag	acttcttttc	tatttagcagt	381960
gatttggatt	tttgtaatgt	ggtgggtcag	tctgtccttc	ctgtccata	ttttacttgc	382020
tagcattggc	ttgtctttct	gtgcacacgt	taaagtcagg	agtaggcatt	tcagcctaac	382080
ccaacgccac	cctttcctca	gcacacggct	tcagctctgg	ctcgtggtta	ttacctaagg	382140

FIG. 6T4

aactgattgc	agggagaagc	agcccaactga	gatgtctact	gccaaagtaat	tagggccaga	382200
gaagttccac	agaccattag	tgtcactttt	gggaacagga	ttttacaaac	attgtggcag	382260
gcacttgagc	tgaagtcctg	tgtcttttta	aggaggaatg	aacctcagga	aaagagagaa	382320
aagaggtgag	acacaaaacga	gaaacgatgg	agagaaatta	attcaaaaag	gaatatggag	382380
gaaaggtaga	aagaaacaaa	gagcgcctta	ggtttaggta	gtttttctgt	tatccaagga	382440
gatggccagt	gtattattca	tttagaagat	tagttagttt	tttgaccctg	tgtctgtccc	382500
tgaatcaagg	gggtgcctgtc	acacaggaag	ggaagttttg	ctaggcaaaa	tgctaaccag	382560
atgacacccc	caatttggtt	cacattggct	tccggggatt	gggagctcct	tactctaattg	382620
cgggtccctgg	agtccctggc	atgcgacacc	atataataga	gccctctggt	gcttcatcta	382680
agtcatatct	tacaggggtc	caagtcatct	ttcctagcaa	aggcatcctg	gtgaagttgc	382740
ggtaattatt	ttgaagcatt	aataaaatgt	attcgggtgtc	aacaaatggt	cttatgctgt	382800
aggggtgaga	tgggactacg	agatgcggga	aaattaaattg	tttctgttta	tctgtctcaa	382860
gatatatttg	ctatatatcgt	ttttctgggt	actttgtaata	gaggcaccac	tgcatgtcac	382920
caaggcaaaag	gtcagaagta	tctctgtgta	aagcccagca	tggatctctg	gccacctgta	382980
cccctgagat	tttctgattt	gatgtcattg	atattttcat	taggaacgat	tattatatga	383040
caaaacaaat	aagactttgt	tattatacct	ttttaagacc	tgaagatgaa	acaaatcaga	383100
aaaataaaat	gatgatagtc	tgtgctgaga	tttttgtctc	agaaaactggg	tcattctcag	383160
agacctcaga	aatcttaggc	taggtacccc	caatttgact	ctctctctct	ttttctctgt	383220
ctttctctca	tctatctatc	atcatctagc	atcatcatca	tctattatct	atctatatct	383280
aatctatcta	ccgtcatcta	tttatttgcc	tatttccata	gcatttgatt	cctcacagca	383340
agctgtctcc	ctgggttctg	gggaattctg	cttaacttcc	tcacttctca	tggcagagtc	383400
cggcagtggt	ttgtaatccc	tgacattggt	ccttggggca	gtagccttgc	tccttgggtg	383460
tttagacctt	ctgaaacctc	tgaaagccga	ggcccagcca	atcaaacctc	cagtgggggt	383520
tgtgttagaa	ttgcctctgt	ttgatttggt	caatataact	tgtctcggga	acaacctgtt	383580
agttccccag	cttgaaaaca	attctacttg	ccaagttcct	gctgacaggc	tgtgctcccg	383640
cgcagcgcca	gtggcagcca	gcgattcacc	tccagggtcc	ggggggtggc	tctgtatgag	383700
acgagacccc	gggatcacaa	gaagtccagag	gtggggctgg	gcactgcatg	tgccaacaga	383760
tttatactct	ggcttcacct	tggcgtgccc	tgctgggtctc	ccaagcccag	atgccccctc	383820
atctttcctg	tacaagggcc	ctgtggggc	tttgcacctc	cttccccaat	tgaaccaacc	383880
ttgaaatcat	ttgttaacac	tactgtcacc	caccagacca	tgggctcccc	aggatggagg	383940
ccgtgtctga	ttcatccttg	tttttaacaa	cgaatacaac	actcaggtct	agagtgtgtg	384000
gcttttattt	agtgtttgtt	gtgtgaaaaa	aatgaagata	taaatggaag	gaaaggggtg	384060
gggtgagggc	atgggacttc	actctgacag	tcatcacgtc	tggttctaag	atctcctctt	384120
tctgctccca	tctctgagca	gtccctacgg	ggtacatatg	aacttttatg	tctcttttct	384180
aatccttctt	agtcccagag	aagaagtgc	aggggccagg	caagaggaca	aatgatccac	384240
tcccatatbt	gttaggatgg	gctaggttat	acggtggtaa	caaataacta	cctgaatcct	384300
ggcatctaaa	cgaaaaaagc	tgtgtggcac	agtggctcac	gcctgtaatc	ccaacatgct	384360
gggaggccaa	ggctgggtgga	tcacctgagg	ttaggagttt	gagaccagcc	tggccatcac	384420
gacaaaaccc	tgtctctggt	aaaaatacaa	aaaattagcc	aggcatggag	acagggtgct	384480
ataatcccag	ctactcagga	gaccgaggca	ggagaatcgc	ctgaatccgg	gaggtggagg	384540
ttgcagttag	ccagagatcat	gcctctgccc	tccagcctgg	gcgacaaggg	tgaacctctg	384600
cctcccaaaa	aaaaaaaagaa	aagaaaaagaa	aaagaaaaaa	gcacttaaaa	atgttggtttg	384660
tttatttagac	tgcttattgt	aaatgtttat	cacaaactgg	ctgggttctct	gctccacgtc	384720
gttttccttc	tagcacccca	gtgtcggaga	aacttccatc	tgagatgtta	ttgattgaca	384780
gcacagaagt	caaaaatactg	cagcaaatca	ctctcgctcc	tgatattctc	tcacagaagt	384840
gacaccatct	ctgttcacat	tcccattgtc	gagaccaagc	cacacagtca	cctaattctca	384900
gggagctagg	aaatgcaatt	ctgccatgtg	cctaggagga	gaaatgaaaa	tatttgggtg	384960
aaggtgccaa	caagtaccaa	ggctcaaaaa	ttgagatcta	tctgtctata	tctaggggtc	385020
tctctctttc	tctgtcaaat	gagacttcct	gccacacttt	ctattgcgcc	gaatcccac	385080
tcactacgct	atcacctctc	tatagcta	ctatcatccg	tctattttat	tgccatattt	385140
agtagcattt	gtttcctcac	agcaagggtg	ctctccgggt	tctgggggaat	tctgctaattg	385200
tcctcatctc	ccatggcagg	gtccaaactgt	gtgatcctta	acacaccagt	taagtgttag	385260
gtgggagctt	cttttctcca	ggtttactat	ccccttttaa	tacctcttgc	ttcaaaaaga	385320
ccccccaaat	taaggcaatt	ggttggacgc	agtagctcat	gcctataatc	ccagcaactt	385380
gggaggctga	ggcgggtgga	ttacctgagg	tcaggagttt	gacaccagcc	tggccaacat	385440
ggtgaaactt	cgtctcta	gaaaacacaa	aaattagcta	ggcatgtgcc	tgtaatccca	385500
gttatttggg	aggctgaggc	aggagaatct	cttgaaccag	gaaggtggag	gttgtagtga	385560
gcagagatca	taccactgta	ctccagcttg	ggagacagag	tgagactcta	tctcaaaaaa	385620
aaaaacaaaa	caaaaaacga	aaaaaggcaa	cacctggggg	tctccatacg	ctctgaccca	385680
atcctcagac	agatcatgag	aatcatcttc	tgcgaggggg	actatccctg	gcctcacttg	385740
atcaattata	tttctcaact	cctcgtgccg	gattctgggg	ttcccgcacc	cccagggtgta	385800
gtgttggtgga	gactgagaac	aggcacagaa	agtgctaacg	gcctcctggg	catgctagtgt	385860
gctaggctgg	gtttcgggtc	gtgccggagc	caggccgctc	taagattcag	gcccgggtctg	385920
caaaaggcct	gcttctctgg	cctgaacggg	aaatgaagc	tcagccctcc	cggcctctcc	385980
cctgtgtgcc	tctgtctccg	agggtctccc	tgatttggaa	tcttaccgct	tgttctcttt	386040

FIG. 6U4

agacttacct	cttagtTTTT	ggccctggct	caataccctt	gccccattcc	aaggacagat	386100
cccagggagt	ggcttggggg	actttaaccc	tctcccta	aatctccatc	tactttattc	386160
ccccaccccc	accttacctc	tctaaagaaa	ataccatcta	aataacaata	gttcacctgc	386220
tgagaagtca	acacttcaag	acaggccttc	aggaccctca	ttctaaccag	ggtatcactt	386280
ttaagccccc	tctataaagt	aaattgtggg	tcacacatac	actgggactc	agttacttga	386340
cactttgtct	tgatgggtct	gacaaaaagc	tgtgacgtga	ccccagtcca	cccagcaagg	386400
atgggtctgc	aaagggtccag	gtccctgaca	gctgagaaga	gtctgtggga	gcctctgtgc	386460
ttgttgagga	ggtctagaga	agcagacatg	atgagactac	tcttccctgg	tgggtgatga	386520
attgaagggg	gaggagcgca	tatctcttaa	agcaaagatt	ctccaagtga	ggtccctgaa	386580
ccagcagcat	ggtcgccacc	tgagaacttg	ttggaaatgc	agattcttgg	gcccacttag	386640
aggtcttgaa	aaaactgtgg	agacagggag	cagccctctg	tgctttaggc	aactctgatg	386700
ctgatggcat	ctgagaacca	ctggctttgg	cttcggccgg	tctctgggtc	tcttgcaaac	386760
acatggcgta	tctcttacia	ctcacactgt	tagggccgac	tcagccctac	taggtcggaa	386820
cctctgagat	ttccccagga	gttttctact	taataaatgt	ccctggggac	gctactgtca	386880
tcaaaggttg	cagaagacac	aggttaaaaa	aaaggccaag	aggtccaggg	tctggaaggg	386940
tgggagttct	ggatttgga	ggcttaggaa	agtccaggag	ttgctctaac	tacaggagac	387000
caagaaagag	aaaaatctgg	gaagtgttag	ctggctaagt	taacgtagtc	agcttatgat	387060
tatccagctg	gaggacatat	aggccctctg	accacctggg	tcccatttaa	cccagttagg	387120
atactgacgc	ttctacagct	ctccagctgc	acactagcac	ctctctgact	tttccctctg	387180
ctcttcctga	gagcttctct	gtgcttcctc	catgtgctgg	ggagacgccc	caaggctgct	387240
ggaccatctt	ctcatcctgc	ccccactccc	accccagtg	aggttcccat	gggacccctg	387300
ttgtatggca	ggtgtccttt	tccttggcca	cacagttggg	aggacactac	tctcctcagg	387360
tgcagaacag	ggctcatttg	cccttcaaca	gagcagggac	caggctgaga	ttttaaacaa	387420
ggctctaggg	atgggttcagg	gaacagtga	aggaagtgtg	actccagaat	gagatccttg	387480
caagcagact	tgactcaaac	tttgtgataa	aggacttttt	tttttttttt	ttgagacgga	387540
gtctcactct	gttgcccagg	ctggagtgc	gtggtacgat	ctcggtcac	tgcaacctcc	387600
gcctcctggg	ttcaagtgat	tctcctgcct	cagcttgcca	agtagctggg	attacaggtg	387660
cctgccacca	tgcttggtta	attttgtat	tttttagtaga	gacgggggtt	caccatgttg	387720
gccaggctgg	tctcaaacct	ctgacctcat	gatccacca	cctcggtatc	ctaaagtgtc	387780
gggattacag	cgtgagccac	cccacccggc	cgctcctctg	tttcttctaa	acctgcctcc	387840
acatggccat	tgtaaatgtt	ccccagattt	ctgtgcttog	gaatcagggt	cacagtggac	387900
ctctggcttc	taggaggggt	ctcccttcac	catgggcccc	tttcttctgc	ccagagctgg	387960
ctgcttctct	gcatgactca	ctgtgggcaa	gacagttcct	tttaaaggaa	ggtctgcttt	388020
caccccagtc	agttcagggt	tcccgggagg	cagataccag	ggcaggatga	gacacacagg	388080
agaaatgtgt	gtggagcatg	aaaggggctt	agtcttagtc	attggctgtc	ttccatacct	388140
catcacctgt	ctgtaggggt	tcagaacaaa	ttagtaacca	ttagtcaact	cccctgtcct	388200
tgacggcatt	attcccttgt	acatgccaat	gtccagcact	ggcaagggtt	tcccccttgg	388260
cctagacatt	ttcacagggt	gcagactatg	aaatcttcag	cacttgggct	gtcactctga	388320
gtctgggatt	atccagtccc	cactttccat	cccagaagga	gtctgacttg	ccagctgggc	388380
agcaagttag	ccagtctcca	atatcatctt	ctccacactt	tcttcacacc	actcctggtt	388440
cccactgtga	gttctctgag	cagtcaatgc	caagtgcac	gagaaaaaca	agagatttac	388500
tagagcaaat	gcctgtgaat	gattaaaagg	gagagcagga	tcagggttgg	agagacttca	388560
gactgagagg	cagctctgac	acctgagaag	ggagagcagg	aaggaaagat	tagaccagag	388620
gagcctcggg	ctgcaacatg	ttctgagaaa	gtcttggcca	ggacagttgg	gtgacccaag	388680
aaaaatgc	ttatttgaag	atcctcgtgc	tgggcagcaa	tggcctggct	ccgggactcc	388740
ggctgtgctc	atcttgtgct	gggagcagcc	cagggggaag	gtggcttggc	atgaagccta	388800
tgggggggtc	gaagggtgcg	cagctggagg	ctgccagtc	tccacattcc	ctgcagcagg	388860
ctctcttgaa	gagggagcca	aatgatgtat	ttctacggcc	accacgtacc	caatgagttt	388920
tggccacacg	cccaatagcc	cgagaagaca	tttgcacagc	catgtccttt	cccagccact	388980
gtccagctcc	tgggtattga	gccatcagtg	gtctcctgtg	gcacagcagt	agcctatcag	389040
gctcagtgcc	atcctctctc	agcctctcat	caaaagctca	gctatgctta	ggatccaatc	389100
ctatgcagag	ataaacttgc	tcctaataaa	gtaacttcat	ggaaagggtac	taggaattga	389160
tttgagtttt	ttatagcggg	aagttacatc	agagaatttt	gttttagtcc	ctcccgcaat	389220
cagttatggc	cccaacagca	aacaaatggc	acgctcagat	taggggtactt	tgtggaggtc	389280
ttattttacaa	aggtgtgggc	aggatgcagg	aaggccacaa	tgggtagtgc	agtgtctctg	389340
gtcagtgc	gctaagttct	caccatccct	aggtcctgga	tggggcagga	ggacagagtc	389400
acacagagga	gaccatcttg	agaagagcag	gtacctctca	ggtgactcag	gagtactca	389460
ggacaaaagtc	tgaagcagcc	gctccaggag	tgaccctgag	gagaaggagt	ctaccctcac	389520
tccatttctc	tccctcattg	gccacaccca	accagagacc	agaggggaag	ggagtccctg	389580
atgtgggtcca	gacaggtgag	cttcccaggg	gagagagcag	gtgctgagtg	gactgggggtg	389640
gggaaagaga	gcacatgctc	taatcctaga	attgaggtgc	agtccaaggt	cacacaaatg	389700
gttgaataaa	ggagatgggc	aacaattcat	ccttgattca	tctacttagc	aaatatattt	389760
tccagtcagc	acagtgctag	gtcctggaaa	tacaaagatg	agcaagtagt	aactttgttc	389820
cctgctgggc	atcctgaggg	cttaaggaca	ttgagtgc	tcaggttttg	aagctgtggc	389880
agttctat	ttcttaatat	catggtctcc	tattgtgc	agagaattga	gatataagct	389940

FIG. 6V4

acagttacta	ttttgagtaa	gaatctgcct	gtatcaatga	ctgagagagg	ctgggagggg	390000
tctcctcacc	cattgaagcc	tgaatcccat	catttgggtt	cagaattggg	tcataaagga	390060
ttttttcatt	tttgagagtt	ccttatgata	atgcaacctc	cagctctcac	cccaggatgg	390120
ttaagtccct	ctgtccccgg	ctctcaatac	tggctgctct	tgggaatcac	cgggagagcc	390180
ttcaagaatg	cagatacagg	ctgggcgggg	tggctttacac	ctgtaattcc	agcactttgg	390240
gaggctgagg	caggaggatc	ccttgagacg	aggagtcca	gaccagcctg	ggcaacgtag	390300
taaaattctg	ttttacaaaa	aaataaataa	attagctggg	cgtgggtggg	catgcctgta	390360
gtccttggga	ggctacttgg	gaggctgagg	tgggaggatc	ccttgagccc	aggagtcca	390420
ggctgcggta	gtgagctgtg	attgcaccac	tgcacttcaa	catgggtgac	agagcaagat	390480
cctgtctcta	aacaaacaaa	acaaaaccaa	aagcaaaaac	cagatacctg	ggcctactcc	390540
cagaaattct	gttttaactgg	ccagtgggac	ccagcctgct	acatgtttag	attctcacct	390600
acagccaggc	ctgagtgcc	gtgaaccact	acctgaaacc	ttcgctgaga	gtcagttatg	390660
agcaaaactg	ttgccaggga	tggaggcaaa	cattagcact	gagaagggaa	acagggacac	390720
caaagacctt	tacagttttg	ttcagtgtgg	gccacgctgg	ggtggggggg	atacgtgaac	390780
ctgcatcagg	gcttccctgta	atccaactgg	catgggtggc	agggtcacgg	gatccctatc	390840
tgttggaaac	aagatgatat	ggaggctgtg	ccatagtgggc	acccatggac	tgcttaggag	390900
tgagctgccc	ttgagggcag	ggcccatctg	gggtgaggtg	agggaggatt	caccttcagg	390960
gagcccaagt	atggggctgg	gtcctgtctt	atttacaatt	ttgatatttt	attcatcagg	391020
gatatttttg	attaattttg	atgtgcatta	aaatatcagt	tatggtgatc	actgagttct	391080
ctgggtgctcc	tttccctttt	ttgttttgtt	tttttgccag	agctgggtgag	actcagctca	391140
cctgggtccca	ggccctactct	ggggcaaggg	acacggcatt	tattgcagtg	ctggtggctg	391200
cagctttatga	ttatgggaat	aggttttgtt	tgaactggga	caaacttggg	tttgaacctc	391260
agcctcagtg	gtgtgacctt	gggctgggtc	ttcacctctc	tgagcctcag	tttcattcac	391320
tgtaatctcc	tggggataac	agaaatccct	aggctaggtg	gtagggctgc	cagggtgaaa	391380
gtcacacatc	agacgtacct	gcagtgccat	ggcaggacct	gcatagagcg	ggccaccaga	391440
atgggtttcg	tcaagggtcc	tgggtggcag	tgcattggc	taaggctgag	tgaggcatgc	391500
ttgttaccct	gcactccccc	cagnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	391560
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	391620
nnccgcgga	gtccctgtcc	ccgcagcaca	cagaggcccc	tttgtctctg	gcccacacct	391680
gactgcggct	cagcaaggcg	gtgacagcac	tgctggcgcg	cagccaggca	ataacaacat	391740
tagtcatgcc	ttttccagaa	aggcctcgta	aacctgcaag	ggtctgggtg	cccctagggtg	391800
gccctgggcg	ggtgtttttc	atttcccttg	cctgttgatt	tttaaattgca	gctgcttttt	391860
ggtgccaaat	ggagaccctc	tgggccagcc	ttggggctgc	tccctgggtg	tctggctcga	391920
ggggaccatc	accaccttgg	cccctgcaga	cctgaacact	gagcattgtg	agttctgggg	391980
tcaacggctc	cagacacaaa	ggcgaatctg	tgggtttccc	ctgggccatt	ggagaaaacc	392040
ctgtggcagc	tccttttttc	cttccctccc	agagcaccct	gttgcccatt	acctggcact	392100
ggcaaccctc	gaggtgcagg	ccactccctt	ctaggggttt	tctttttttc	ttcttctttt	392160
tttgttttga	gaogaagttt	tgctcttgtt	gcccaggctg	gagtgacgtg	gcaccatctc	392220
tgctcactgc	aacatttgc	tcctgggttc	aagcgattct	cctgcttcag	cctcttgagc	392280
agctgggatt	agaggcggtg	accaccatgc	cgggctaatt	ttgtattttt	agtagagatg	392340
gagtttcacc	atggtggcca	ggctgggtct	gaactcctga	cctcaagtga	tctaccgcgc	392400
tcggcctcct	aaagtgcctg	gatttggggg	tttcttaatc	ctcccttgga	gacatccaga	392460
aggaggtggg	gatcatgact	gctaaggagt	gaagctacct	gcccagcatg	tcaggacaaa	392520
gcagccctgc	accagtggtc	ttccttctgc	agaaacgctg	gagcacaaca	tggagtggga	392580
gggctggctt	tggggaggct	ctggcactgg	agtcattgca	ttgcgggggg	ctgggtgctga	392640
gggggtgtcc	ctgtcagttg	gggctcctgg	cattgaggag	ccccaggcac	tggggagctc	392700
ctggcactgg	ggaatccttg	gcagttagaa	gccaggctgt	tggtacaact	gaaactcaga	392760
gctgactgtg	gtgatcttta	gggctgtcta	caaagatctg	cgtgtttttc	tccccctagg	392820
catgtgatag	gattgcattt	tcttgtcttc	ttgaacgcag	gcattttttg	agtggaaatg	392880
actgtgctgc	ttttgagtga	gcatttgaaa	agcctgtgct	ttgcttttga	acattctttc	392940
cctttgcat	ggtaactggc	aatgtcctag	atagttggct	ccccgtcctg	tccccccacc	393000
ctcatcaacc	tggggcctgg	agtgaggact	atgagccgct	gaccgtgggt	gcccccttagc	393060
ataacctggc	ccatcccgcc	tgctgcactg	accggccctc	ccagcttggc	acaggccata	393120
gagacaggca	ggaaaaatac	aatttcttga	ccccttataa	acctgcagag	ttttcttgggt	393180
gagctgggag	actctgcagc	aggtcagaga	agcaccctaa	gtgcgtggca	cccatgactc	393240
tcactctgct	ctagccttgc	ctatctttaa	aaagtgtagt	aaatattatt	tacagcatga	393300
agccttctat	aaataggggt	gacggcctta	ccacataaaa	acccaggaca	cacagctgaa	393360
tttgaatttc	agataaacag	tgctacgcaa	tgtataattt	ttttcagtat	aagcaatgtt	393420
tgtgacatac	ttatactaaa	acttatgcat	tgtttatctg	aaattcaa	tcagctgggt	393480
gtcttgatatt	ttatcaggaa	atcctatcta	taatctttct	ttcctcta	caatatagca	393540
tttataactc	tatttatgac	tttctgcccc	ggattgtaat	aatgatgttc	ccattttatc	393600
tgccccgttg	gacttttggg	ttcttgaggg	tacaccata	gatctcaggt	atctggcgca	393660
gcccccaacc	cagacccctc	gcttagtaga	ggcattaact	taacgaaaaa	gttgggtctg	393720
atgtggcgga	aggcttttag	aggtgtctca	agagaaaaaa	aaggacagca	caaagaatta	393780
gacatttgtg	tttttctcgc	ttccttccaa	ataacatcag	agtctagcat	tttgtatttt	393840

FIG. 6W4

gcgggtgacca	tggacctagc	agctggaagg	agaccctaac	ttctttttcta	ggttgtttatc	393900
gtcctttccc	agcagaccct	atgctggaaa	ctgagctagt	acttccaggg	tccgtgcgcc	393960
tctctgagaa	gctgctctgc	aaactcttgc	atcctcgtgg	gtatgggggc	actgggaggc	394020
accgtcctgg	aaaggggaaca	tgtcacaaac	agccaatgcg	ctgggccttc	ctgggctcca	394080
gcacacaggt	agatgaactt	ccgcggctcc	tccaaggcat	caactctgct	aaagaaccct	394140
gggaacaaag	ctgtagagga	ctgcaatggg	agctcctgtc	ttgagcgtcc	ttgggtgtgg	394200
cacacgccat	gctttcgacc	ttagaaatca	gcgttgggag	catcaagggt	cctgcatgtt	394260
ggacgttggc	cagtttctgc	tatctagccc	ttaaagaaat	gtcaacatcc	cgagagcaga	394320
tgttcctcac	tctcactgct	caagacacta	cttaatgttt	atctcacttt	ctcttagtct	394380
gggctcagag	taagggaagt	tctattcatc	ctccaattgc	agaagccagc	actgggtttt	394440
cctccccacg	atgctctagg	tagctgtgtt	ctccctgagg	tcctggatta	ttggggaagg	394500
cagaacacgc	cccaattttc	agaaccttag	gcaactttag	acaactacta	ctgccagtga	394560
tagacaatgt	acctctaact	caattcaaac	gaggaaactt	ttacaaacat	ttacgcagct	394620
ggtgaacttc	tctacattgc	agagttttcc	ccagattcat	cccagttcag	cttctctccc	394680
atctccataa	ccacctgcac	ctcagaataa	gcagacagag	ccatgatcac	cagaactgga	394740
cttactgggc	atgcgctcag	tgtttctttg	tgggggtttc	ttatcttctt	gtagaggctt	394800
ggggtatgaa	acctgcattt	agtccccaaa	atgggtccaa	atggatctat	tggctcccag	394860
tgttcttgac	atatagggtcc	atatgaatgt	cccctagcag	caacatccat	gcatacgcga	394920
cgcacaagggt	aagcacagga	atacatagac	ctgcaaagag	aacggaagga	gggaaacttc	394980
gcttggtatta	tccacttatg	cactaacttc	ctctctctct	tcctttctct	ggtacatgcc	395040
ctatgcaatt	gtgaaggata	aaaagcagtg	acaatgtcat	gctatctcat	gaaattagca	395100
cacagtcata	tcccagaaga	accaaagggt	ttattttaag	gacccaaagt	agcctgggggt	395160
ggcttctctc	tgcagtgtag	ccaattctcc	tccacaccag	gctcagggga	aagtgtctac	395220
tgttggtatca	taaggcagcc	taagccaagg	atggcggctg	cttttgggtg	ctatggtctc	395280
cccagcccta	acacagtgcc	gggcgtgcaa	cacatgcctg	ctgaatgaat	gggtgagtga	395340
atgctgaaga	aataaatgat	gtgcacttta	ctttatgtct	ggttttttct	ttgggctcac	395400
ctttccctgg	caggggaacag	gaatgattct	ggaagttgaa	agtaggatgt	gagtctggga	395460
aaggcatcaa	ggacagccat	gacccagttt	agcaatccag	atctcaccct	gactcccgtt	395520
gcatttcttt	tgaagtcctt	tttttctttc	tgcattgtga	gatgttctct	tttctctgtc	395580
cagggtcaac	ccaagcatgg	gatagacccc	cttggcttcc	tgcaacacct	tccacgcccc	395640
ctccccatta	tcagatacgt	taggaatttc	tactggaaat	tgaaggaaac	aggcaaattc	395700
accacatcct	gagctttccc	tgctcctctg	tcttctttcc	caatttctct	cacccccgaa	395760
ccctgttcgc	ctgaagctgt	ggccaggacg	agcttctgaa	tcccggccat	gctctgcate	395820
ttgaccttgg	tgttggttcc	atgtgtattt	gctttacaat	tatttttaaa	actgaacata	395880
tatgaccttac	tcttctatat	gtgcgtgtat	cttacattaa	aaaaaagaag	ggaagacttt	395940
ctgttcatttt	ctcatgtggt	gtggctcagc	tatctcttat	ttattttctt	ctatgtcctt	396000
ggaggccttat	cttctatatt	aaagcagttt	atctacgtat	tttgctaaac	atgggcagtc	396060
ctcccattaa	caggaatgtc	ttagcataag	ataagataaa	atttcatagt	aggatggaca	396120
ccacatattt	ttgagaactg	ctagggtcca	atatggccag	aacgtagggt	gtgaggcgca	396180
gggcagatg	aagatggcaa	ggttaagtgg	gcctgtctct	gaggaccctg	caggccaggc	396240
caaggatcat	gcattcttat	ttagaggcag	aaggagccat	ggatgtgaag	aggatgcaga	396300
ggttcccaga	aggtgagttt	agagcctggg	aaacgaggta	ggagggaatg	taatgagttc	396360
agtcagaaga	gtgggcatga	gcaggggctg	tgtggtggag	aggaaaggga	caggaggcgt	396420
gccttgggat	agacaggact	ccctggctgc	ttagatatga	catggaaggg	agaggacaga	396480
ctgagatact	gtcacatttc	tagcttgagc	aatgtgtgac	tgtcatgctg	ctcttgagga	396540
tggagcagta	ggagggaaac	aggccccggt	cagtggtcac	atgcgggatg	cagagcaaac	396600
ggagcccaag	gccaatgaca	gacannnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	396660
nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	nnnnnnnnnn	396720
nnnnnttctta	cattgcatga	gtgcaaaggg	gacattgaaa	tatgtatttt	cagtaaataga	396780
taccataaag	cctctgtgtc	ttgtgtaaca	ttcacagttc	atgtgttaat	tctggcccaa	396840
gcctgctcat	aaacagggtt	ttccacaagt	cccaatcacg	aatgatggaa	ggaagctatt	396900
ttaaagatca	gactgtaaac	tttttaggtt	aaagggtccac	taaagactca	gcggttttgt	396960
gtttgtcaag	taaaatcaag	tatcacttac	acacaaaccag	ataaaaccagt	ctggaagttg	397020
tttctttttt	gttgacagca	caaaaagcaga	tccttttacag	gattgatttt	ctttttgaca	397080
ctttgtaaac	acgttttagt	ctgctaaaac	catgttagca	catacttttt	aatcaaacgc	397140
tttattaaaa	agctacacta	gatcgtgacc	aagctattga	cctcttaaat	taacgggtgt	397200
aattttattga	gttgatttga	ttttagtaag	tgtgtgtgtg	tatatcctat	ttgtaatcac	397260
tcatttgtat	tgaacacta	tcagtcaa	gtttgaactc	agtcgctgct	ttttccacat	397320
ttcaaaaaaac	agaattgaaa	tatttttaaat	taaaaatgga	tacaaacatg	tgaattctta	397380
aactatttttg	ttttatctat	attatttccct	agagtacaaa	agaaagatat	tttatgattt	397440
tatgatcatt	tatgagcaag	agtaaaaaat	tactatggaa	aatagaatta	tgtacaacta	397500
aaacatttttc	aaatgtcaaa	agtatttctat	attgttcatt	tttaaagtaa	ccaatttcta	397560
atcaatataaa	taagtgttat	tttgggtatt	atatgtatta	atattgtttt	attaatagac	397620
acgaacgcac	gcacacacgc	acacacacac	acacttaag	taaaaactgt	tagccctcct	397680
attaaatttt	aattacttaa	aaatatctcc	taggtgctcc	ttaactaaaa	aattcaacta	397740

FIG. 6X4

atttctaaac	aataatttga	ataactagtt	cataataact	catttaaatt	gtctttgccc	397800
tgacgacagc	acatggtatt	ttactaatta	attaaaaaat	aattattgag	cttaaagtgc	397860
aaatttaaagg	ctcaactaga	taaattaggt	taattagata	agtctatagg	taactgaaaa	397920
taaaaatgat	catttctgaa	aattattctg	ggctaataat	tttgacctta	aaattagttt	397980
taacgctttt	taaaactgca	gtcaaactaa	aagaaataac	attttctcaa	taagaaaaaa	398040
atttatattat	aggaaatgtt	ttattatttt	aaaagaatat	tataggaaat	ggaaaaatcc	398100
tttgctctgt	gaaacatcat	ttgataaata	ttggcaaaag	aatcacaaatg	ttcacaggag	398160
ggctcctcat	tcggccctca	tctgtatact	tctacattga	ttggcttcat	ataatccctt	398220
atgacgcagt	aaaaccacgc	agtcagcttc	atcaagttag	cgccaaataa	aacaaaattg	398280
actaaagggt	aattctacta	ctttgaaaag	agttttgaac	tcagtgttga	aggtaacgag	398340
ttaattaaat	tgctcattac	ttcaacttaa	atggagtaag	ttcacagtac	tcatatagat	398400
tagtttttaa	ctcaaaggtt	ttgtagcaat	cagtttcttc	taaccgttcg	agttgcctta	398460
actaattagg	tatcttatta	gacttatttg	agttctcttc	atttattggg	ttttactgtg	398520
ctcaaactgc	ttcctttact	caaatggatt	atgttcacag	tactcaatag	gattcatttt	398580
ttaaacttaa	atgggtttgtt	gcaatcgggt	ttcttaaaat	ggttttgagtt	accttaactt	398640
aatggactta	agttaagtta	actttttatg	gagcagttat	taatttcagt	acttgaatta	398700
gtaacatttg	ttattttgtt	taaattgagt	tcatactttt	caaaattcta	aatgtttctc	398760
acttgcacag	cagctctttt	gatcattttca	tctttcttgg			398800

FIG. 6Y4

Amino acid sequence of FLAP (>alox5ap_protein translation NM_01629)

MDQETVGNVLLAIVTLISVVQNGFFAHKVEHESRTQN
GRSFQRTGTLAFERVYTANQNCVDAYPTFLAVLWSAGL
LCSQVPAAFAGLMYLFVRQKYFVGYLGERSTQSTPGYIFGK
RIILFLFLMSVAGIFNYYLIFFGSDFENYIKTISTTISPLLLIP
(SEQ ID NO: 2)

MRNA of FLAP (NM_001629_mRNA)

Acttccccttcctgtacagggcaggttggtgcagctggaggcagagcagtcctctctggggagcctgaagcaaactatgga
tcaagaaactgtaggcaatgtgtcctgttgccatcgccacctcatcagcgtggccagaatggattcttggccataaag
tggagcacgaaagcaggaccagaatgggaggagcttcagaggaccggaacactgcctttgagcgggtctactctg
ccaaccagaactgtgtagatgcgtacccacttctcgtgtgtctgtgctgctgggggctactttgcagccaagtctctgct
gcgtttgctggactgatgtactgtttgtgaggcaaaagtactttgtcggttacctaggagagagaacgcagagcaccctg
gctacatatttgggaaacgcatactcttctgttctcatgtccgttgctggcatattcaactattacctcatcttcttttcgg
aagtgactttgaaaactacataaagacgatctccaccacctctccccctctacttctcattccctaactctctgctgaatatgg
ggttggtgttctcatctaatactacaagtcataataatcagctcttgagagcattctgctctctttagatggctgtaaat
ctattggccatctgggcttcacagcttgagttaaccttgctttccgggaacaaaatgatgtcatgtcagctccgcccttgaa
catgaccgtggcccaaatttgctattcccatgcattttgtttgttcttctacttatcctgttctctgaagatgtttgtgaccaggt
ttgtgtttcttaaaataaaatgcagagacatgttt (SEQ ID NO: 3)

FIG. 7A

111/131

FLA310657 / B_SNP_310657 (R = G/A) (SEQ ID NO: 398)

GGGCTACTTTGTCAGCCAAGGTAAGTCAAGTCTCCCTTTGTTTCATTCTCCTTCTATAAAGTGCATCTCAA
GGAGGTTCAAAGGGCAGGCTTTTTGTTGAAAGGACTTTGCCTGACCTCTGGCTCCCATCTGTGAAGCCC
TGGAGAGGTGAGAGCCCTCGGGAGGCCGTGTTTCAGGCATGCTCTGCACCCGTGCAGAGCGC

R

TGTGATAATGCATTGCTAATGCTTGCTCCCTGGTGGCTGGCTGAGAGCTGCTGTGCTGACAAGGGTGGT
TTAAGGCTAAATGTGACTCAGAATCCTTAAGCAGTGTTAGTTTCAGATACAAGGGCATTATAAATGAGAG
TGCCTGAGGGATCTATTTTGGGACCGCTGTCACCTTGGCTCTTCTGCTAATAAGCTTCCAGTG

FLA302465 (Y = C/T) (SEQ ID NO: 399)

GTTTCTGCTAAATGACAGTTGATGGAGGACATTTAGGGTTGCTTGGAGGTCAAGTCAAGGAGGCATTTA
ACATTCTAGTAAAACAAGGAAGTAACAGGCTCCTGAACATGCCCACAATGAACCAGATGCAAACCTTTT
CCCTTGGCAGGATTCCTTTGCCATAAAGTGGAGCACGAAAGCAGGACCCAGAATGGGAGGAG

Y

TTCCAGAGGACCGGAACACTTGCCTTTGAGCGGGTCTACACTGCCAAGTGAGTCTTAACCTTGATGTTG
CTAATAAGTGGGGCATGGGCAGGGGGGCTCCTTCTAGGAGTGATGACCACCCTTAATACCACATGTC
TGTCTGAGCCAAGTTTCTGAGCGCCAGGGAGGTGAGGAAGGTTGGACTTCACCAGAGAGGCT

FLA302524 / B_SNP_302524 (M = C/A) (SEQ ID NO: 400)

GAGGCATTTAACATTCTAGTAAAACAAGGAAGTAACAGGCTCCTGAACATGCCCACAATGAACCAGATG
CAAACCTTTTCCCTTGGCAGGATTCTTTGCCATAAAGTGGAGCACGAAAGCAGGACCCAGAATGGGAG
GAGCTTCCAGAGGACCGGAACACTTGCCTTTGAGCGGGTCTACACTGCCAAGTGAGTCTCTAA

M

CCTGATGTTGCTAATAAGTGGGGGCATGGGCAGGGGGGCTCCTTCTAGGAGTGATGACCACCCTTAAT
ACCACATGTCGTCTGAGCCAAGTTTCTGAGCGCCAGGGAGGTGAGGAAGGTTGGACTTCACCAGAGAG
GCTTTGTGGACACCCCTTTATCATCTTAGTGAGTGCTAGTGTCAAACAAAGGGAGTGGGGAT

B_SNP_302560 (R=G/A) (SEQ ID NO: 401)

CAGGCTCCTGAACATGCCCACAATGAACCAGATGCAAACCTTTTCCCTTGGCAGGATTCTTTGCCATA
AAGTGGAGCACGAAAGCAGGACCCAGAATGGGAGGAGCTTCCAGAGGACCGGAACACTTGCCTTTGAGC
GGGTCTACACTGCCAAGTGAGTCTTAACCTTGATGTTGCTAATAAGTGGGGGCATGGGCAGG

R

GGGCCCTCCTTCTAGGAGTGATGACCACCCTTAATACCACATGTCGTCTGTCTGAGCCAAGTTTCTGAGCGCC
AGGGAGGTGAGGAAGGTTGGACTTCACCAGAGAGGCTTGTGGACACCCCTTTATCATCTTAGTGAGTGC
TAGTGTCAAAACAAAGGGAGTGGGGATATGGGGCACATTGGTGGAGGGAGGTGTGATCTCTG

B_SNP_302617 (Y=C/T) (SEQ ID NO: 402)

CTTTGCCATAAAGTGGAGCACGAAAGCAGGACCCAGAATGGGAGGAGCTTCCAGAGGACCGGAACACT
TGCCTTTGAGCGGGTCTACACTGCCAAGTGAGTCTTAACCTTGATGTTGCTAATAAGTGGGGGCATGGG
CAGGGGGGCTCCTTCTAGGAGTGATGACCACCCTTAATACCACATGTCGTCTGTCTGAGCCAAG

Y

TTCTGAGCGCCAGGGAGGTGAGGAAGGTTGGACTTCACCAGAGAGGCTTTGTGGACACCCCTTTATCATC
TTAGTGAGTGCTAGTGTCAAACAAAGGGAGTGGGGATATGGGGCACATTGGTGGAGGGAGGTGTGATC
TCTGCAGCTTCAGAAAGATCTGAAAGAGTCATTTGGTTAGAGAAGTTGACCTATTTCTCTGTG

FLA314500 (S = G/C) (SEQ ID NO: 403)

CTGCTGCGTTTGCTGGACTGATGTACTTGTGTTGTGAGGCAAAAGTACTTTGTGCGGTTACCTAGGAGAGA
GAACGCAGAGGTAGGTAAGTGGGACTACTAAAGAACTGTGGAGCGATTCTTGATTTTTGAGCAGGAAGA
GTGACAATTCAAAACAGTATTTGACTAGATTACGGCTCCGTAGCATCCCCTTGGGTGGGAG

S

GGGAAGGCTGACTAGGACCTCTGATTCTTCTTTCCCTGAGCTTTGAAGGCTCTGAAAATACAGCTGGGG
GGACTTGGCCAGTTTCTTATTAAGCAATTCTCCGCATGGTGTGCTGGCTTTCAAAGGGTGCTTCAGTGC
TGTTTGCTGCACGTGCTTGCAGCCCCACACCCTGCACTCCCGCCCTGCAGAGTCTGGCGCT

FLA267479 (R = G/A) (SEQ ID NO: 404)

CTCATGGATTTTGTGTTTCCAAGTGGCAAGATGGCGCCTCCACCTTTGGTATCCTATTTTAGTTCTCTGGC
AGAAAGAAAGGAACAGGCTAATGGCCCTGATGAGTCTACCCCCCTTTTAACAGGAGAAAATTTAAAAAAC
AAAAACCATGAAACCTTTTCCCAGAGGCAACAACCAGAATTCATTTATCTTTTCATTGACCA

R

112/131

AACAGACCACATGGTCACTGGTGGTGGCAATGGAGACTGGGGAGATGAATATTTTTTAAGGTGGCATATT
CCAGAAGAACACTGTGCACTGATTGCATTAATGAACCCATTAATGTGCCAAGGGGAGGTTTACCTATGA
GCATGGGCAAATTAGAACCCACTCTTGGAGCTGCAGGTGAGCCAATCCCACCTAAACAGTGT

FLA267696 (R = G/A) (SEQ ID NO: 405)

ACTGGTGGTGGCAATGGAGACTGGGGAGATGAATATTTTTTAAGGTGGCATATTCCAGAAGAACACTGTG
CACTGATTGCATTAATGAACCCATTAATGTGCCAAGGGGAGGTTTACCTATGAGCATGGGCAAATTAGA
ACCCACTCTTGGAGCTGCAGGTGAGCCAATCCCACCTAAACAGTGTGGATGCTACAAGATGG

R

GAAGTAAATTGATTCTATTCCATACCCTAACCTCTCTCCAAGATGTATTCTTAAATAGAAGAGGGGAAG
ACAGAAGAAAACATCCAGAATATATTTTTATTGTCTTTTACTTCTTCAGTGCATTTTAGATCAGTGCTT
CTCAATCTGGCAAGGGGCATGCAGGAGGATGTGAGTTTATCAGGAAAACCTACACAACCCCC

FLA267853 (R = G/A) (SEQ ID NO: 406)

GGTGAGCCAATCCCACCTAAACAGTGTGGATGCTACAAGATGGGGAAGTAAATTGATTCTATTCCATAC
CCTAACCTCTCTCCAAGATGTATTCTTAAATAGAAGAGGGGAAGACAGAAGAAAACATCCAGAATATAT
TTTTATTGTCTTTTACTTCTTCAGTGCATTTTAGATCAGTGCTTCTCAATCTGGCAAGGGGC

R

TGCAGGAGGATGTGAGTTTTATCAGGAAAACCTACACAACCCCCCAACCACAATGCTACCCCCACTCCTG
TGGACCTTCTTTAAGAGAGACTCACTATTATAGATGGAGTTGATACGATTTTAAAGAGAGGCCATATATT
ATTTGCTTTCTGTCTTGAAAACTTGTGATTTTTCTGTATTGTGCTACTGCCAAAGAGAATA

FLA270742 (Y = C/T) (SEQ ID NO: 407)

TGTTGCAGTTCTCATTGCTGGGGAGTCTAAACTGGAATAAAACACCCACTATCTCCATCAGGCTTGAC
TAGAGCCCAGCTCTAGCTGGAGAGAAAAGAAGCTAACCCGCACAGACACAGGACTGTAGGCAGGGAGCAT
CCGGGGGTATTTGGGTCTTGGCTCTGATGTGCCTAAGGCCAACTTCTCTCTGGCCATGCTGG

Y

GTGCATGAGCTCACTAATCTTCCTTTTTTGCTTCCATTTTCTCCAATCCTGACTTAGCAAAGGTTGGGC
AAAAGAGACTCTGTGTGAGTTGAGCAAGCCTGAGATGCTGGATTTTCCAAGATACGAGAAGGGGCTG
GGGGCTGGGTGAACCTGGTGGTGGAGGAGGGAAGGATTAATTTCCCAAGGAGGGGAAGGGGCC

FLA270830 (R = G/A) (SEQ ID NO: 408)

GAGAGAAAGAAGCTAACCCGCACAGACACAGGACTGTAGGCAGGGAGCATCCGGGGGTATTTGGGTCTCT
GGCTCTGATGTGCTTAAGGCCAACTTCTCTCTGGCCATGCTGGCGTGCATGAGCTCACTAATCTTCCTT
TTTGCTTCCATTTTCTCCAATCCTGACTTAGCAAAGGTTGGGCAAAAGAGACTCTGTGTGA

R

TTGAGCAAAGCCTGAGATGCTGGATTTTCCAAGATACGAGAAGGGGCTGGGGGCTGGGTGAACCTGGTG
GTGGAGGAGGGAAGGATTAATTTCCCAAGGAGGGGAAGGGGCCAGGACATCAGGCCCGGGGACTTTGA
AGAGAGGGTTCGTGGGTAGGAGGTAGATCAAGTGGAGTGACACAAAGGTCAGGAAAGAGGAAG

FLA273407 (W = T/A) (SEQ ID NO: 409)

GCTTTAACTTGTACACTATGGCCAAGTTCTTGGGGCTCTCCAAGCTTCACTTCTCTGTAAAAAG
GGCAATAATATAATACCTGTCTTATTGGGTTTTGTCCATGTTAGATGAGACATTGGGTACAAAGCACTT
GGTCCCGTGCCTGGCACATTTACTGCACCTAATGTATGATAGTTTCTTATTATTCTAATAA

W

CAATATGGCTTTGGGAGTATAGTTCTGCCACATTGCAGTGGCCAGAGTGAAGGTGGTGAAGTGCCTTCTG
GGGCCCTGGGAGTCAAGGTTATCCGCATGCCCTTTCTTGCTTGCTCCTCAGTGTGGCTGCCTCTATGTC
CACACCATGCAGATGCAACAGGTAGTTTGAACCTCTGAGGCCACAGTGGGATGGGGAGGCA

FLA274084 (R = G/A) (SEQ ID NO: 410)

TACCGAATCCAGCATTCAAAGTGATGGAAATATGTATATATAGTAATAGTAAATATCAGCACTTAATG
GCCTGATAAGAATGTCACCTGCAATGCTGAGTTTGGACCAACATTTGCCTGCTCCTGCCATTGAGCCCGG
GCTCCCCCTCCAGAGCTGAGCTGCTGCAAGGGATCTGAGTAACTAGGGCTGTGTCAGAGTGGC

R

ATGACAGCCACCACATGCTAAGGAAGAGATCCCCAAGGACAAGGAGAATCCCACGTGGAGCTACTTGCT
TCTTTGTGCTGCTTGTCTTTCTTATTTTCAACCTTCTAAAACACAATCTCTCAACCTCTATTGTTAGC
TTGCATTTTTCAATCATGAGCACAGCTTTACCTGGCTCCATGCTTTGATTGACTCTACCTGC

FLA275784 (Y = C/T) (SEQ ID NO: 411)

113/131

GAGTGGCTCACAGAACTCAGGGAAACACAGCTACCAGTTTATTGCGAAGGACATTTTAAAGGATAAAAG
TAGGCAGATAAAGAGATGCATAGGGCGAGGTGTGGAAAGGTCCCTAGTGCAGGAGCTTCTGTCCATGTG
GAGCGGGGTGCACCACCCTCTCAGTACATGAATGAGTTCTCCTTCACCTGCCTATCAGCCT

Y

TACATGTTTCAGCTCCCCAACCCAGTCCTCTTGGGTTTTTATGGAAGCTTCAAGACACCCACATTCTTTC
CCCAGAGTATAGGGCAAGACCTTCTCTGGGGAGGGTTTTAAGACCCACAGTCAGAAAGGTGGGGTGGGG
TCAAGATTAGAGTCTCTGCCTTGACGGGCAGGTGAAAGGGGTAGGGGGAGTAGGTGAGAAAAA

FLA275952 (R = G/A) (SEQ ID NO: 412)

GAATGAGTTCTCCTTCACCTGCCTATCAGCCTCTACATGTTTCAGCTCCCCAACCCAGTCCTCTTGGGTT
TTTATGGAAGCTTCAAGACACCCACATTCTTTCCCAGAGTATAGGGCAAGACCTTCTCTGGGGAGGGT
TTTAAGACCCACAGTCAGAAAGGTGGGGTGGGGTCAAGATTAGAGTCTCTGCCTTGACGGGCA

R

GTGAAAGGGGTAGGGGGAGTAGGTGAGAAAAATTCTGTTTATTTTTCTTTTTTTTTTTGAGACGGAGT
TTCCTCTTGTGCCCAGGGTGGAGTGCAATGGCACAATCTCAGCTCACTGCAACCTCCGCCTCCAGG
TTTAAGCGATTCTCTGCCTCAGCCTCCCGAGTAGCTGGGATTACAGGCGTGTGCCACCATG

FLA277478 (R = G/A) (SEQ ID NO: 413)

CTGGTATACCTAGAAAACATTCCATAAAAGTTAGTAATTTGTTGGTCATGTAATGATGACCTCTAGGCT
AGGATTTTCACTTCATTGCATGCACATGGTGCCTCACAGGGCGTGACCTCTCTCTGTCTCAGTAACCT
CATCTGAGGACCGGGATAATCATACCGCTTCAAAGGGATGTCATAAAGATTAAATAATATGT

R

TAAGGCTGCTTGCATTTAGCTGCATTCAACAAATATTTCTGTATCTTTCTCCTCATTTCTCCTTACTTT
CTTGCTTATTATCTGCTCTAGGTATAGATTTTCAAGAGAACTAAGCTTGTACAATCCTTCATAAAATAAC
CAGGTTGGTTAGGGCATTTCGAAGAGTCAATACTGTTTAGTGACTATTCTCTGTTTAATCTA

FLA277678 (M = C/A) (SEQ ID NO: 414)

GTAAGGCTGCTTGCATTTAGCTGCATTCAACAAATATTTCTGTATCTTTCTCCTCATTTCTCCTTACTT
TCTTGCTTATTATCTGCTCTAGGTATAGATTTTCAAGAGAACTAAGCTTGTACAATCCTTCATAAAATAA
CCAGGTTGGTTAGGGCATTTCGAAGAGTCAATACTGTTTAGTGACTATTCTCTGTTTAATCT

M

TTTTGATTGTCCAGGGTCATCTTTTGCTATGTCATAGGTTGTTGGCTTCTTCTAGAGAAGTGAGACGAT
GGACAAGTTCCAAGTGAGTGAGGCGACTGGTCAGGATATTCGCTGAAAACTCATGTCAAGTTCTAATT
CGTGATTGTAATTCAATCACAGCCTGAGAACAGTAGGACTGTAGTTCAAATGCTCTGTTCCC

FLA278185 (R = G/A) (SEQ ID NO: 415)

CTCCTGGGTTCAAGCAATTCTCCTGCCTCAGCCTCCCAAGTAGCTGGGACTACAGGCACATGCCACCAC
GCCCAGATAATTTTCGTATTTTTAGTAGAGACGGGGTTTCCCCTTGTTGGCCAGGGTGGTCTTGATCTC
TTGACCTCATGATCCGCCCACCTCGGCCTCCCAAAGTGCTGGGATTACAGGCGTGAGCCACC

R

CGCCCCGGCCTCTAGAGGATAATTTTTAAATGTGCTTTTGCATTTGGAAAATGTGATTGGCATTTTTTTTC
TAATTTTCTAATATGATACGCTGTGCGATGCTATGGATTACTTAAACCCTCTGGCTACCTAGAAAGATC
TTTAAGTGGTTCTCAACAAGCTTCATACGCAATGTAAATTGTATTATCTCTCAGGATGTGTG

FLA278492 (R = G/A) (SEQ ID NO: 416)

TTACTTAAACCCTCTGGCTACCTAGAAAGATCTTTAAGTGGTTCTCAACAAGCTTCATACGCAATGTAA
ATTGTATTATCTCTCAGGATGTGTGAGAACATCTGTTTTTTCTTCTAATGCAGTAAACATATAAGGGTCT
CTTGGGATATCTTTTAAATAGACTTAATACAACATTCAGGAATGATAACAAAATATAATCAC

R

GTTGTAAGGGAATGTGAGCATTTTCATATTAATAACATTGGAACCTTATGTTTAAATACAGTGTTAAAAGT
TGACAAACATGTAGGAGTCAGAAAATTCAATTAAATATATCACAGTAATATGAATTTAGCCACATCCTG
TGTTAGTTATGAAATCCATTTAACACCACAAACAGTAATATTTTGTAGCCAGTTTATTCAAAA

FLA278845 (K = G/T) (SEQ ID NO: 417)

TCCATTTAACACCACAAACAGTAATATTTTTAGCCAGTTTATTCAAAGGAAAACAGGAACTAAACCAC
TTTCATGCAATATATACTCTGTTAATGTGGTCAGGCTAATTTTGTCTGGGGGAAGGAACTTAACTTTTGA
ATATTTGAATGCCAGTCATTTAATCTGAATATCCTATTTCTTGCATGTTGCAAAATTTTT

K

TCAATAAAAGGCAGAAAAAGAAATCTTCTCCATGCTCATCCCTAAGAGAATGGGTTGTCTGTACCCCT
GAGAGCATTTTTATGGAGGGGACAACCACTTTTCTAATTTTCTTCTTCCACTTCTCTGTGGGCACAAATGC
TCTTTGGTTGAAAGAGTTGTAATTCAGTCCCAAGATGAGGTGTGGTTACTGCATCCCTAACC

FLA280183 (R = G/A) (SEQ ID NO: 418)
ACAACACTTCTCTGGTAAGATTTTTCCTGACATCCTCTATAAAAAAAGATTGAGATAGTTGACTACCCA
AAATGTTTCCCATTCATTCCAAGCTCTATTCAAGGCAGTAAAGTGCCCGCTGACAGATTGCATTCCCTC
ATCTTTTCTGAAGCTAGCAATGGCCATGCAACAGCATTCTGGCCAATAAGATAGAAGTCGAA

R
TTGAAGGGTGGGATTTCCAAGAAAGCTCGTTGAAGACATAATTCTTCATTTCACTTCTTACTCTTTCTC
TTTCTGCTTCTTAAATGCGGTGCAGATGGCAGACACTTCAAAGCTGTCTCAGGCAATCAGGTGATGT
TAAGGCAGAAACCAGCTTTATGATGGGTAGAACAGGAAGAAAGAAGGCACCTATGTTCTTGT

FLA280923 (M = C/A) (SEQ ID NO: 419)
TCCCTACAAATCTCATGTTGACATTTTATCCCTAATATTGGAGGCAGGGCCTAGTAGGAGGTGTTTTGG
TCATAGTGATAAATGGCTTGGTGCCGTTCTCACAGTAACGAGTGAGTTTTTATTCTAGTGGTTCCTGCA
AGAACTGATTGTTAAAAAGAGCTTGGATCCTTCCACCCCTCTCTCACTCTTGCTTCTCTCTCTC

M
CACCTTGTAATCTCTACAAGCTCTTCACCTCCCCTTCTCTTTTTGCCATAAGTGGAAGATTTCTGAGGC
CTCACCAGAAGCAGATGTTGGTTCCATGCTTCTTGACAGCCTGCAGAACCATGAGCCAAATCAACTTC
TTTTCTTTATAATTATCCAGTCTCAGGTATTCTTTATAGCAACACAAATGGACTAAGACAG

FLA283400 (S = G/C) (SEQ ID NO: 420)
TGTCCGTGAGTTACAGATCTACACAAAATCACAGAGAGTGGTTAATCGTTTAGTCTGATGGTCAGGGAC
TTCCAAGAGACATGATTAGAAAACCTGGTGACAAGGAGTCTGGGGGAAGAGGCATATGGATACCTCTGAA
CACACACAAAACATGAGAATATGTATCCCATATGAATGTTAACCAGAGCAGCCACAACAG

S
AAGAGGATTTTAAAAATCAGCTGAATAAGATGATTCACTCTGACAGCATCAGCTAGTCTCTTTCCCGAGC
CACTGTTGCCAGTGGGCTTACATATATCATGGCCATGGGGGCAGGGCTATGTATGGACACAGCAACAT
GAATTTCCACTCATCAAGGCCAATTTGGGCTCCAGCCATTGCTGAGTGCTCAGCCTGCCAAGA

FLA283477 / SG13S25 (R = G/A) (SEQ ID NO: 421)
AGACATGATTAGAAAACCTGGTGACAAGGAGTCCCTGGGGAAGAGGCATATGGATACCTCTGAACACACAC
AAAACATGAGAATATGTATCCCATATGAATGTTAACCAGAGCAGCCACAACAGAGAGGATTTTAAA
ATCAGCTGAATAAGATGATTCACTCTGACAGCATCAGCTAGTCTCTTTCCCGAGCCACTGTT

R
CCCAGTGGGCTTACATATATCATGGCCATGGGGGCAGGGCTATGTATGGACACAGCAACATGAATTTCC
ACTCATCAAGGCCAATTTGGCTCCAGCCATTGCTGAGTGCTCAGCCTGCCAAGATAGAAATCTACGCCA
ATATGGCACCATTCCCTGGGCTAGAAAACCAACTGGTGGAAGGTTGATTACATTGGACCATT

FLA284410 (R = G/A) (SEQ ID NO: 422)
CAGGGAATACAATGGTGGTTCCACTAAACTGACAGCTGAGTTTGCCATCTCCTCGTGCCAGTGAATACA
CAAGCAAGGAAGGGGGTTCTTTCTCACCTAGGGTGACTGATCCTAATTACCAAGGAGAAATTGGACTG
CCACTTCACAATGAGGGTGAGGAGTATGTACTCTATGTGTCTGTGATTAATGTCAATAGAAA

R
TGACACCAACCTAGTACACAGAGGACTGATCATGGTCCAGGCCCTTCAGGAATGAAGATTTGAGTCACC
AGGCAAGGAACCTTGGACTCACTGAGGAGGGCATATTCCAAGGAGAATATTTTATCTATGTCCATCTATG
TCCATCTATATTCCATCTGTGTTCCCTTGGGAATTCCTATTTCATGAACATGGGGAAATCCAA

FLA284815 (M = C/A) (SEQ ID NO: 423)
AATATAGAATGAGTAGTGGAAGGTAGTTATAAATGTAAGTCAAAAACCAACACAACCAATTTGAGAAATG
AGGAAGGTAATAGTGTGAAATATGTCTTCTTTATCTTGATATAAATGTATTTGTGCATATATTAAACCAG
TTTATTTATTTATTATTATTTTTTGAGATGAGCTCTCGCCATGTTGCCAGGCTGGTCTTGA

M
CTCCTGGGCTCAACTGATTCTACCATTTAGTCTTCCGAGTAGCTGGGACTACAGGCATGCACCACCATA
CCCAGCTGACCAGTTTTTTCTATTCTCTACTTAATTTCTCTACTATACAACATAATATGTGTTAATG
GTAGTTAACTTTATATCTCAGTATTAAGTCAACAAGATATCAAAAAGGGAATGCGACTTAGTT

FLA284903 (Y = C/T) (SEQ ID NO: 424)
ATATGTCTTCTTTATCTTGATATAAATGTATTTGTGCATATATTAACCAGTTTATTTATTTATTATTAT
TTTTTGAGATGAGCTCTCGCCATGTTGCCAGGCTGGTCTTGAATCCTGGGCTCAACTGATTCTACCA
TTTAGTCTTCCGAGTAGCTGGGACTACAGGCATGCACCACCATAACCCAGCTGACCAGTTTTT

Y

115/131

CCTATTCTCTACTTAATTTCTCTACTATACAACATAATATGTGTTAATGGTAGTTAACTTTATATCTC
AGTATTAAAGTCACAAGATATCAAAAAGGGAATGCGACTTAGTTACAAGCAGAATGAATATCACTCAAAG
ATGAATAAAGAGAAGAGGGTTAGTGCATTTTCTGTTGGATGAGAGAAAGTTTCATTGTTAGG

FLA290195 (R = G/A) (SEQ ID NO: 425)

TCTTTTTGTTCTGTCTCAGCAGCTCTCTATTAAGATGAATGGCATTTCCAAAGGCTTCACCTCTGATAA
GTGTTCCCTCTGCAGCTGCAGCCAGAATCTTAATGTGCGCGCTGTAATTTAATGGCCGTCTCGGCTATTA
ACACGCTCTTCTCGGGTGAAGTGGACTCCCTCCATCCCCGGGCCTCTGCACGTGCTCTGCGC

R

CTGGCTGGGGGTGACTCCAAGGAGCTCAGAGCGGGGTGCCGGCACCTCTCGCCAGGCGCCTTTTCGACC
TTCTAAAGCGCAATGGCTGGACTTTTCTCCCATGTGTGGGGCCCCAGAAGGTGTGGGGCCCCAGAAGG
TGTGGGGTCCCTGCGTTCCACGGAGCCCGGAAGGTTTCCAGTGATGGTGGGGGCTGACCACG

FLA290553 (S = G/C) (SEQ ID NO: 426)

ACGGAGCCCGGAAGGTTTCCAGTGATGGTGGGGGCTGACCACGTTGGTCCCCGTGGGTGCTGTTTTTCAT
GTGCCGGCAGATTGGGATGAGTTTAAAAGACAGAAGCGTGTAGGATAGAGAACTTCTTTAAAAACTGG
AAATTTTAATCTGGGGATTATAACTATTGGACAGTCAAGTGCAAGAGTGAATACACTTCTCA

S

TCCCTCCTCCCAATTTTTATTTGCGGGATTAGTCAGTCCCCCTCTGCCACATGATAATTGTGAGAACTA
CCAGGCTCTTCATTCTCCTGCCATCTGGTTGACCTCTCCAAGAATGGACACCCGGGCAGCCTGGGCCAA
TGAGGCTGTCTTAAGAGTTTAGATGAGAGAAGTCAGTCTTTGACAGGTGATGGAAGCTGTAA

FLA290570 (Y = C/T) (SEQ ID NO: 427)

TCCAGTGATGGTGGGGGCTGACCACGTTGGTCCCCGTGGGTGCTGTTTTTCATGTGCCGGCAGATTGGGA
TGAGTTTAAAAGACAGAAGCGTGTAGGATAGAGAACTTCTTTAAAAACTGGAAATTTTAATCTGGGGA
TTATAACTATTGGACAGTCAAGTGCAAGAGTGAATACACTTCTCACTCCCTCCTCCCAATTT

Y

TATTTGCGGGATTAGTCAGTCCCCCTCTGCCACATGATAATTGTGAGAACTACCAGGGTCTTCATTCTC
CTGCCATCTGGTTGACCTCTCCAAGAATGGACACCCGGGCAGCCTGGGCCAATGAGGCTGTCTTAAGAG
TTTAGATGAGAGAAGTCAGTCTTTGACAGGTGATGGAAGCTGTAAAATGTAAAACCTCCACAG

FLA292253 (K = G/T) (SEQ ID NO: 428)

TCTCCACCAGCAGCTTTTCTGAGTCTCCAGCTTGCGAGATGGCAAACCATGAACTTTCATGGTGTCCATG
AGCATGTGAACCAATTTCTATTATAAATCTGCAATATATATATAGAGGAGACTTATTTATATATTGGT
TCAGTTTCTCTGGAGAGCCTTGGCTAATATAAAGTCTATACTCTACAAAGTGCCCTAGGTAC

K

CAGGGAGTACCCAAGTGTGTCTATGACCAGCCCGACAGCCCTGGCTGCTGGCTTCCCCGCACACAACTCT
GCACGCTGCCTTCATCAGCCTTTCTCTCTCAGCTGAACCGAGGGCATTGAAGCGGGCCTCTGGCACTGT
ACCTATGAGGGAGCAATATCTTCCCTACACTGACCTCTTCCGTGCCGAGATGCAGCCCTCC

FLA292576 (W = T/A) (SEQ ID NO: 429)

GGGCTCTGGCACTGTACCTATGAGGGAGCAATATCTTCCCTTACACTGACCTCTTCCGTGCCGAGATG
CAGCCCTCCCTGCTGCCACTAGTTACAGTGGTCCATGTTCCCTTTCAAAGTGAAGTTTGTATAAAAGCA
CCTCTTAACCAATGCCAAATAGCTAAGTCTGGGACAAAGATTGCAGGTATTTTGCATTTTCC

W

TGTAACCTCAGAGGGATTGCCATTACACTGATCTGAGCTGCAGAATACCAGGCAGCCACCTCACCCAC
CCAGCAGGTCCACTCTTATACTTTCTCAGAAAGCACAGCCACTCTACTCTTATTCAGTTGAAAAGAAAT
TCCAGGAAGGTGTTTCTGCGATTGCCTCAGAAAAGTCAGTTCCCTTTGGGAATTTCCCTTAG

FLA295036 (R = G/A) (SEQ ID NO: 430)

CATTTTTTATACTAAATTACACACAACAAAGTTGTAGCTCAGAGAGGGAACAAATGGCTTATTTAGGCCA
CCATTTTCTTGGCCATTATGATTTACACAGGGCTCCCTTGGCCCTGTAAATTGGCAAGGATTCATTT
ATTCAACCCGCATACATGTACAGAGACCCTGCTCTGGCCAGATAGTATTCTGGGTACAGGC

R

GATAGAGCAGGAAACAAAACAGCTACAGTGATGGACAGGTGAGCTGCAGCAATGCCTGCAGTCTCTGC
AAAGGTAGCTGTATGGGTGGGCAGGTGGCTAGCACTTATTCAGCTCTGGAAGGATCTCCCTCTGGCCT
CTCCCTTGACACCCATCAATAAACTGAGGAGCATCGGTGGACAGGGGACCTTGTGCCCCCT

FLA296102 (W = T/A) (SEQ ID NO: 431)

116/131

GGAGGGGGCAAACATTCAAATAACTCAGGAGATAACACAACATATTTGTTTTTAAGTGTGAGTTTTTAG
GCAATCACAAAGATCCAGATGTATGTCCAAGCCTCTCTTTGCAATTCTAATTAACCTCAATGTTGCAAC
CATAGACCTACCTTACAGAGTTCAAAAAAATATGCAAAAACCCTGCCTTTCTTCTTCTCAT

W

CCCCAAAATGCCATTCTGAACATTTCTGTAGTTAAAAAAGATTTCCATGGTGTACACAGGCACTGT
ACACAGTCTGTGTCCCAAGACAAGGAGGTACAGTTCCACATGCGCCCATGACTGGGTGGGCTCTGCAC
TCTCTCTATACCTTTGAGAGCCTGATTTTCTGTGATTGGGCAGAGCTGGCCACCTGGTGCAA

FLA298098 (R = G/A) (SEQ ID NO: 432)

AATCATCTGACTTTAGAGAGTAGACACTTGCTCCATGCATATTGCCTCCAATTCATTCATTCAAGCACT
CCCTGCTCAAGAAGTTCTTTCTTATGTTGAGCTGAAATCTGCAGCCCTATGCGTTTTACCCAGCAGTCC
TGCTGCTGTTCCCTAAAATCACTTAGACTGTGCCTGCTCTTTCTGTGTTTACAGTGTGAGCT

R

TAATATCCCCCTCTTCGGCCTAACGTTTCTGAAGTCCCTTGCCACTGGGTCTCCTCTCCTCTTCTCTGTG
TTCTTTCTAAGAACACCTATGCAGATAGGTGTCTTCTGTACAGGGAAGCTGTTCTCTGAGATCCGGGCAT
CGACTCTGTTAGAATAATCTACGTATGAGTTATTTTTTTGAGAACTATGTGTGCTGCTGAG

FLA298188 (R = G/A) (SEQ ID NO: 433)

TTATGTTGAGCTGAAATCTGCAGCCCTATGCGTTTTACCCAGCAGTCTGCTGGTGCTGTTCCCTAAAATCA
CTTAGACTGTGCCTGCTCTTTCTGTGTTTACAGTGTGAGCTGTAATATCCCCCTCTTCGGCCTAACGTT
TCTGAAGTCCCTTGCCACTGGGTCTCCTCTCCTCTTCTCTGTGTTCTTTCTAAGAACACCTAT

R

CAGATAGGTGTCTTCTGTACAGGGAAGCTGTTCTCTGAGATCCGGGCATCGACTCTGTTAGAATAATCTA
CGTATGAGTTATTTTTTTGAGAACTATGTGTGCTGACTCATATTAACCTCTGTGGTTAACTAAAAT
CTCAAGATCTCTTTATGTTTGTGAGAACTTATTTAACTTCTCTGGCCCTCCGTTTCCTTC

FLA298230 (Y = C/T) (SEQ ID NO: 434)

CAGTCTGCTGGTGCTGTTCCCTAAAATCACTTAGACTGTGCCTGCTCTTTCTGTGTTTACAGTGTGAGCTG
TAATATCCCCCTCTTCGGCCTAACGTTTCTGAAGTCCCTTGCCACTGGGTCTCCTCTCCTCTTCTCTGTG
TTCTTTCTAAGAACACCTATGCAGATAGGTGTCTTCTGTACAGGGAAGCTGTTCTCTGAGATC

Y

GGGCATCGACTCTGTTAGAATAATCTACGTATGAGTTATTTTTTTGAGAACTATGTGTGCTGCTGACT
CATATTAACCTCTGTGGTTAACTAAAATCTCAAGATCTCTTTATGTTTGTGAGAACTTATTTAACTTC
TCTGGCCCTCCGTTTCCTTCACTGAGCAGTGGAGTGATTGATAACCTCCACCTGTGGTTGCT

FLA298379 (M = C/A) (SEQ ID NO: 435)

AACACCTATGCAGATAGGTGTCTTCTGTACAGGGAAGCTGTTCTGAGATCCGGGCATCGACTCTGTTA
GAATAATCTACGTATGAGTTATTTTTTTGAGAACTATGTGTGCTGCTGACTCATATTAACCTCTGTGGT
TAACTAAAATCTCAAGATCTCTTTATGTTTGTGAGAACTTATTTAACTTCTCTGGCCCTC

M

GTTTCCTTCACTGAGCAGTGGAGTGATTGATAACCTCCACCTGTGGTTGCTGAAGGTCTTGACACAAGAT
GATATAGTTAAAGTAGCTAGCAGTGCCACGTACGGCGGATGCCCTACAACGGTTTGAGCCATCTCTC
TATCTGTGTCTTTGTCTCTCTCACACTGGTTTTGGCTTACTGTTAGCAGCTAGCCGAGAT

FLA298507 (M = C/A) (SEQ ID NO: 436)

ACTCTGTGGTTAACTAAAATCTCAAGATCTCTTTATGTTTGTGAGAACTTATTTAACTTCTCTGGCC
CTCCGTTTCCTTCACTGAGCAGTGGAGTGATTGATAACCTCCACCTGTGGTTGCTGAAGGTCTTGACACA
AGATGATATAGTTAAAGTAGCTAGCAGTGCCACGTACGGCGGATGCCCTACAACGGTTTGCT

M

GCCATCTCTCTATCTGTGTCTTTGTCTCTCTCACACTGGTTTTGGCTTACTGTTAGCAGCTAGCCGA
GATAAGTGTGTTTATGGTCTTTGCATGTATTGTTCTGTAGCATACTGGAGGATTACAAGAGGTTGGGG
AGTGAGGGGGCGGTGAGGAGTAGACAAAGGCAGCCAACCTCTTCCAAGTTTAGCTTAGAAGGA

FLA298604 (Y = C/T) (SEQ ID NO: 437)

GATTGATAACCTCCACCTGTGGTTGCTGAAGGTCTTGACACAAGATGATATAGTTAAAGTAGCTAGCAGT
GCCCACGTACGGCGGATGCCCTACAACGGTTTGAGCCATCTCTCTATCTGTGTCTTTGTCTCTCTCTC
ACACTGGTTTTGGCTTACTGTTAGCAGCTAGCCGAGATAAGTGTGTTTATGGTCTTTGCATG

Y

ATTGTTTCTGTAGCATACTGGAGGATTACAAGAGGTTGGGGAGTGAGGGGGCGGTGAGGAGTAGACAAA
GGCAGCCAACCTCTTCCAAGTTTAGCTTAGAAGGAAGGAGCGGTAAACCCTAGTTGAATGTTGGACTGAA
GCAGGTTTGTTTTTGTTTTGTTTTAAAGGATAGGGAAGATCTGTGCGTGTTCAGGATAAAG

FLA298987 (Y = C/T) (SEQ ID NO: 438)
CGTGTTCAGGATAAAGAAAAGGAGAGAATATGATATTAAAGATTCTGGAAGTGGGAGAAGGAGCAAT
GAAATACAGACTTGAAGTCAGTGGCATGGACAGGGTCAAGATCACAGTTAGAGGATGCAGCCTTAGAGA
AAAGGAAGGGGCTCGGTTCTCTGAGCAAGGAGGGAAAGAAGAGAGGCAGATGCAGAGAACTA
Y
GGCACATCGTGCTGCTGGTTGTAGAAATAACCTCTGACTTTTAATAAAGTCATCCCTCGGTATCCCTGG
GGGATTAGTTCTATGACCTCCCTCGGATGCCAAAATTCGTGGATGCTCAAGTCCCTGATATAAAATGGC
ATAGTATTTGCATTTAACCTACACACATCCTCCATATCCTTTTTTTTTTTTTTTTTTTTTTTTTTTT

FLA299063 (R = G/A) (SEQ ID NO: 439)
AGACTTGAAGTCAGTGGCATGGACAGGGTCAAGATCACAGTTAGAGGATGCAGCCTTAGAGAAAAGGAA
GGGGCTCGGTTCTCTGAGCAAGGAGGGAAAGAAGAGAGGCAGATGCAGAGAAGTACGGGCACATCGTGCT
GCTGGTTGTAGAAATAACCTCTGACTTTTAATAAAGTCATCCCTCGGTATCCCTGGGGGATT
R
GTTCTATGACCTCCCTCGGATGCCAAAATTCGTGGATGCTCAAGTCCCTGATATAAAATGGCATAGTAT
TTGCATTTAACCTACACACATCCTCCATATCCTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTTGT
GAGATGGAGTCTTGCTCTGTGCGCCCTGGCTGGAGTACAGTGGCTCGATCTTGGCTCACTGCA

FLA299772 (S = G/C) (SEQ ID NO: 440)
CTCAGCCTCCTGTGTAGCTAGGATTACAGGCCCTCCCAACCCCAACCCCAACAACCTGGCTAATTTT
TGTAATTTTAGTAGAGATGGGGTGTACACACGTTGGCCTGGCTGGTCTTGAACCTCCTGACCTCAGGTGA
TCTACCCGCTTCAGCCTCCCAAAGTGATGGGATTATAGGCATGAGCCACTGTGTGTGGCCTA
S
ATTACTTATAATACCTGATAGAATGTAAATGCTATGTAAACAGTTGTTATACTGTATTGTTAAAGACA
GTAAACAAGAAAAAATCTGTACATGTTTCAGTCCAGACAAATGGTTTTCTGTTTTTTTTTTTTTTTTTT
AATATTTTGGTCAGTGGTTGGTTGACTCCAGGAATGCAGAACCCGCAGATATAGAAGGTTG

FLA299843 (Y = C/T) (SEQ ID NO: 441)
TATTTTTAGTAGAGATGGGGTGTACACACGTTGGCCTGGCTGGTCTTGAACCTCCTGACCTCAGGTGATC
TACCCGCTTCAGCCTCCCAAAGTGATGGGATTATAGGCATGAGCCACTGTGTGTGGCCTAGATTACTTA
ATAACCTGATAGAATGTAAATGCTATGTAAACAGTTGTTATACTGTATTGTTAAAGACAG
Y
AACAAGAAAAAATCTGTACATGTTTCAGTCCAGACAAATGGTTTTCTGTTTTTTTTTTTTTTTTTTTAA
TATTTTTGGTCAGTGGTTGGTTGACTCCAGGAATGCAGAACCCGCAGATATAGAAGGTTGATTATGCGT
TCAGAGGCAGGGAATACCATCTTGGGTTCCAGAAAGAAAATGATCAGCATTTTCTGTCATAC

FLA299980 (R = G/A) (SEQ ID NO: 442)
ATAATACCTGATAGAATGTAAATGCTATGTAAACAGTTGTTATACTGTATTGTTAAAGACAGTAACAA
GAAAAAATCTGTACATGTTTCAGTCCAGACAAATGGTTTTCTGTTTTTTTTTTTTTTTTTTAATATTT
TTGGTCAGTGGTTGGTTGACTCCAGGAATGCAGAACCCGCAGATATAGAAGGTTGATTATGC
R
TTCAGAGGCAGGGAATACCATCTTGGGTTCCAGAAAGAAAATGATCAGCATTTTCTGTCATACTCTGGT
AAAAACAGATCTTTTGAATGGACAGGTGTATTAAACCTGTGGAGCTGGCTGGGCCTGGCGGCTCACGC
CTGTAATCCAGCACTTTGGGAGGCTGAGGCAGGTGGATCACGAGGTCAGGAGTTCGAGACC

FLA300662 (R = G/A) (SEQ ID NO: 443)
TATGCCCCGAGAGTTTGAAGTCCCGGCTGCACCTCTCCCCAGCAGCAGGTTGACTCTGGAAAGTTGCA
GCGTTCTTACCTACAGAGTGGGAACAGTACTACCCATTGCACAGAGTGGGTGCAAAGCTCTGTGACGGA
ATACATGGCAAGTGCCACCATTCCTGGGATGAGGTGGGCCCTTCCTTTACGTAAGAGA
R
CCCTACAGATACACTCAAAGTGGGCACATTCCTACAGAAGGAGTGTTATTTGTGTAGAAAAGAAAAACA
TGAAAGGCTTTTATTCCTATACACAATAAAGCACCCCTTTAATGTCTTTTTGAGGAGGATAATATGAAA
TTGATGAAAAGGAACCTGTGGTTGGATCCCTGACAATCACATGTATCCCTTTTTTCACTCT

FLA300864 (R = G/A) (SEQ ID NO: 444)
CCTACAGATACACTCAAAGTGGGCACATTCCTACAGAAGGAGTGTTATTTGTGTAGAAAAGAAAAACAT
GAAAGGCTTTTATTCCTATACACAATAAAGCACCCCTTTAATGTCTTTTTGAGGAGGATAATATGAAAT
TGATGAAAAGGAACCTGTGGTTGGATCCCTGACAATCACATGTATCCCTTTTTTCACTCTT
R

118/131

AAAAAGGAGTAAAGGAATAAAATAGAAAGGGGAGAGGGGGCAGAGAGACCTTCACCGCCCCCCCCCCCCACC
CCCCATCATCCAATCTATAGTCAAACCCCTCCAGACTGTGTCTCCTTGGCATCTCTGACACCCCCACCGC
CACCACCCAGTCAATTCTATCTTATCCCCCTATCCTGGATCTGATTCTGCTAAGTTCCTG

FLA302094 (R = G/A) (SEQ ID NO: 445)

GAACATTCTGAACCACAGACAGTTCTTTACCCTGAACCTTTGCATATTTTGTCTCTTAGCTTAGAGCG
GCCCCTCTCCCTCCGTCTGCTTGGCTAATTTCTACTTGTTCTTCAGATTTTATCTTAGATGTCATTCCC
TCAAGGAATCCTTCTGTGACTCAACATGGAATTAAGTTGCCTCCTTTGACCCTGAAAGCACC

R

TGTACTCAATCTCATCTTGGCATGACTCACCTTGTGTGTGGAATGTCTGCTTTCCTTGTGTTGTCTATT
CCTTTAGACTGTAAGATCCTAGAAAGTGGGGGCCGTGCCTTGTCTCATGACTGTGTTTCTAACACCAAAC
ACAGTGTTCAGTAGAGAGCAGCTGCTGAGTACGTTTCTGCTAAATGACAGTTGATGGAGGAC

FLA303769 (W = T/A) (SEQ ID NO: 446)

TCATCTAGGTATTTTAAATTGTTTCAGTGAGGTGTAGGCATGAGGGGATTGGAGGGGGCATCTCCTCCA
TTGCAGTTTTTTCATTGGCTGCTTGTCTCCCTCAGCTCCGAAATCGCTGGGCCACTCTCGAACGCATTAG
TACGGTAGTCACAGTTGATTGCTTGGCCCCCTTGCCCTCTGTGGGCATTTTCCCTTTCAGAC

W

GCCCCGTGAGTACTCACAGTGCTGCTACAGTGGGCCACCTAGATCTCCCTCTTTCTCCATGCTCCACGT
GCTCTGGGCTCCACTCCCTTCTCCCAAGCACTTCTGTCCAGGGCTATTCCAGCAGTCTGACCTCAAGGA
AATCCTTTGCTAAACTGATTATAGAGAGGTTTCTATTTTAAACATTTAGGTCTTCCATGTATT

FLA303796 (Y = C/T) (SEQ ID NO: 447)

TGAGGTGTAGGCATGAGGGGATTGGAGGGGGCATCTCCTCCATTGCAGTTTTTTCATTGGCTGCTTTGCT
CCCTCAGCTCCGAAATCGCTGGGCCACTCTCGAACGCATTAGTACGGTAGTCACAGGTTGATTGCCTGG
CCCTTGCCCTCTGTGGGCATTTTCCCTTTCAGACAGCCCCCTGAGTACTCACAGTGCTGCTA

Y

AGTGGGCCACCTAGATCTCCCTCTTTCTCCATGCTCCACGTGCTCTGGGCTCCACTCCCTTCTCCCAA
GCACTTCTGTCCAGGGCTATTCCAGCAGTCTGACCTCAAGGAAATCCTTTGCTAAACTGATTATAGAGA
GGTTTCTATTTTAAACATTTAGGTCTTCCATGTATTAATTCTCAGAATCAATTTAAGATGTTT

FLA303957 (Y = C/T) (SEQ ID NO: 448)

TCCCTTTCAGACAGCCCCTGAGTACTCACAGTGCTGCTACAGTGGGCCACCTAGATCTCCCTCTTTCTC
CATGCTCCACGTGCTCTGGGCTCCACTCCCTTCTCCCAAGCACTTCTGTCCAGGGCTATTCCAGCAGT
CTGACCTCAAGGAAATCCTTTGCTAAACTGATTATAGAGAGGTTTCTATTTTAAACATTTAGG

Y

CTTCCATGTATTAATTCTCAGAATCAATTTAAGATGTTTAAAGGTGTGATTTAAGACATTTTAAAACCA
TTTGAGGAGAGTACAGAAATTATGTCACCTTGCTGTGTCAGCCTCTTTGCACCATCTGCAGAGAAAGATAC
TAGAGTCCCGCCTTGGACACATCCACATGCAAGAGGTGCAAAGAAGGTGTCTTTGATGAGGC

FLA303967 (W = T/A) (SEQ ID NO: 449)

ACAGCCCCGTGAGTACTCACAGTGCTGCTACAGTGGGCCACCTAGATCTCCCTCTTTCTCCATGCTCCCA
CGTGCTCTGGGCTCCACTCCCTTCTCCCAAGCACTTCTGTCCAGGGCTATTCCAGCAGTCTGACCTCAA
GGAAATCCTTTGCTAAACTGATTATAGAGAGGTTTCTATTTTAAACATTTAGGTCTTCCATGT

W

TTAATTCTCAGAATCAATTTAAGATGTTTAAAGGTGTGATTTAAGACATTTTAAAACCATTTGGAGGAG
AGTACAGAAATTATGTCACCTTGCTGTGTCAGCCTCTTTGCACCATCTGCAGAGAAAGATACTAGAGTCCCG
CCTTGGACACATCCACATGCAAGAGGTGCAAAGAAGGTGTCTTTGATGAGGCAAGGTCAAAA

FLA304170 (Y = C/T) (SEQ ID NO: 450)

ATTCTCAGAATCAATTTAAGATGTTTAAAGGTGTGATTTAAGACATTTTAAAACCATTTGGAGGAGAGT
ACAGAAATTATGTCACCTTGCTGTGTCAGCCTCTTTGCACCATCTGCAGAGAAAGATACTAGAGTCCCGCT
TGGACACATCCACATGCAAGAGGTGCAAAGAAGGTGTCTTTGATGAGGCAAGGTCAAAACTT

Y

CTCCCCAGACGAAATCCAAAGAAAGCATTCCCTACTATGCTATATCAGTTTGGAAAGAAAACTTCTGCC
AGGTGACTGCATTCTCACTGGTCACATTGTGTTTCTATGGACTCCTCAGCTCAACCAATTTGGAGAAGT
TATGGTGCAATTTACCATATCTGGTTAGAAGTTAAGTTTCCAATTTGCTGGCAATGAAGAA

FLA304334 (Y = C/T) (SEQ ID NO: 451)

119/131

CAAAGAAGGTGTCTTTGATGAGGCAAGGTCAAACCTTCTCCCCAGACGAAATCCAAAGAAAGCATTCCT
ACTATGCTATATCAGTTTGGAAAAGAAAACTTCTGCCAGGTGACTGCATTCTCACTGGTCACATTGTGT
TCCTATGGACTCCTCAGCTCAACCAATTTGGAGAAGTTATGGTGCAATTCACCATATCTGG

Y

TAGAAGTTAAGTTTCCAATTTGCTGGCAATGAAGAAGAAATGGAGCAGGCCAGGCTGTGTAGTTTCTGC
CACGTGCCCCCGGGAGTGAACAGCTCTGTTTGTAGAAGCCATGGTGCTTAGACCTGGGCTCGCTAGTT
GCCAGCCTCCAAATTGCAGAAGTGCCCTTTGGTTGGTGGCTATGCTGTGTCACTTGGGAAGG

FLA304512 (Y = C/T) (SEQ ID NO: 452)

GGTGCAATTTTACCATATCTGGTTAGAAGTTAAGTTTCCAATTTGCTGGCAATGAAGAAGAAATGGAGC
AGGCCAGGCTGTGTAGTTTCTGCCACGTGCCCCCGGGAGTGAACAGCTCTGTTTGTAGAAGCCATGGT
GCTTAGACCTGGGCTCGCTAGTTGCCAGCCTCCAAATTGCAGAAGTGCCCTTTGGTTGGTGG

Y

TATGCTGTGTCACTTGGGAAGGTCGTTTGGGAAGTTCCACAGTCGTTGTGGGGTGCCAGAGATTAAAAAG
CGTAAGAGGAGAGTGGAAAGTGATTGTTGCTGCTTGGGCATCCCCACCGTGTGGGTGCTGCAGCCCAGC
TCTCAAACCCATGGGTCTGTACACTCAACCTCCATGAGAGGGAAGGAGAAGGATGAGGGAG

FLA304583 (R = G/A) (SEQ ID NO: 453)

GCCAGGCTGTGTAGTTTCTGCCACGTGCCCCCGGGAGTGAACAGCTCTGTTTGTAGAAGCCATGGTGC
TTAGACCTGGGCTCGCTAGTTGCCAGCCTCCAAATTGCAGAAGTGCCCTTTGGTTGGTGGCTATGCTGT
GTCACCTTGGGAAGGTCGTTTGGGAAGTTCCACAGTCGTTGTGGGGTGCCAGAGATTAAAAAGC

R

TAAGAGGAGAGTGGAAAGTGATTGTTGCTGCTTGGGCATCCCCACCGTGTGGGTGCTGCAGCCCAGCTC
TCAAACCCATGGGTCTGTACACTCAACCTCCATGAGAGGGAAGGAGAAGGATGAGGGAGGGGAGAGAT
AGCCATGGAAAGGTAGGAACTAAGCAGGCAGGGTGGAGAGTTTCTGTAAGACAAAACTGT

FLA305089 (R = G/A) (SEQ ID NO: 454)

GGCAGCTACATGCTGGCAAAAGCCAGAGGCAGCTGGTCTGTTTGCCTGTGCCAGGAAACCACTGGGAAT
GGGGTTGTGTGTTATTCTAGGAGAAAGTCGTCCCAGCAGCAGCTTCTCCAGGGGCATCCAAGAGCACTG
AAAAGGGTTGCAAGATGACCCATGAGGCTGCAGGAAGAAAAGAACATGCATTTAATCTTGCT

R

TCTGAAAAGTAAGACATGAAGCTTTCCTCATTTTTAATATACACATGGACAGTAGTATGTGTATATAGT
TTATATGCAAAATATACTTGTATAAGGTTGCATGCTCAAAATTTTGGTTTCATGGGGTGTGGGATCATA
AATGTTTAGGGACCATGGCTATCAAGGAAAAACAGCATGAAGGATAAATGATACTGGTGGAT

FLA305505 (W = T/A) (SEQ ID NO: 455)

ATGTATTTTATAGCATAAAACACAACCTGCTGACTGATACAGATAGCTCAAGATTCTGGGGCAGCTGCTGA
ACAGATACACTAGCCAGTGTGGCTCATCGGCTCAGACTTGGCCTTAATTAATGGGCTGTCCCTCCACCC
ATCTCCCATGAGGGCAGAGCTGAGCCAGGGTTTGAAGCTAAAAGGAATTGGACCTGGACTC

W

GTTACAGTGTATATTTTAATTCTAATTAATTCATTCTTTTGAAAGACAGAGTCACACTCTGTTGCCTAG
GCTGGAGTGCACTGGCAGCATCTTGGCTCACTGCAACCTCGGCCTCCAGGTTCAAGTTATTCTCCTGC
TTCAGCCTCCTGAGTAGCTGGGATTATAGGCACATGCCCCATGCCTGACTAATTTTGTAT

FLA305678 (Y = C/T) (SEQ ID NO: 456)

GAGCTAAAAGGAATTGGACCTGGACTCTGTTACGTGTATATTTTAATTCTAATTAATTCATTCTTTTG
AAAGACAGAGTCACACTCTGTTGCCTAGGCTGGAGTGCAGTGGCACGATCTTGGCTCACTGCAACCTCG
GCCTCCAGGTTCAAGTTATTCTCCTGCTTCAGCCTCCTGAGTAGCTGGGATTATAGGCACA

Y

GCCCCCATGCCTGACTAATTTTTGTATTTTTAGTAGAGACGGGGTTTCACCATGTCAGGCTGGTCTTGA
ACTCCTGACCTCAGGTTATCCACCCGCCTTGGCCCCCTCAAAGTGTTGGAATTACAGGTGTGAGCCACCG
TGCTGGCCTGTTACATGTATAAAACACAGTTTAATGTCTTATTTCCAGCCAATGAGCATG

FLA305956 (K = G/T) (SEQ ID NO: 457)

CCTCAGGTTATCCACCCGCCTTGGCCCCCTCAAAGTGTTGGAATTACAGGTGTGAGCCACCGTGCCTGGC
CTGTTACATGTATAAAACACAGTTTAATGTCTTATTTCCAGCCAATGAGCATGGCTAGAGCAGCCTTG
GTCAAAGTTTGGTTTGGGAGAAAATCCTTGTAGCTGACCTAAGATTCTCTTTGTGAGT

K

TAAGTAAGCACAGGTTGCAGAGAGGAGAAGGGTCTCTGGAGAGGTGTAATTTTCTAAATGGATTACAAG
TTCATGGACTTTTAAACAGGTGTTACAGGGGATAACAAGTTCTTTATAGACAGACTTTTGAGGACGTTTA
AGGGTATTCTGATTCTTGGTTTTCTAAGAGGGGAATGTATTATTTAACTACAGACACCCCTA

FIG. 7J

FLA306447 (Y = C/T) (SEQ ID NO: 458)
ATTCTAGACTCACTTTCTTTCTGTTTTTTTATTTTTATTTTTTTTGGAGATGGAGCTTCACTCTGTCACC
AGGCTGGAGTGCAGTGGTGCAATCTTGGCTGACTGCAACCTCTGCCTTCCGGGCTTAAGCAATTTTTGT
GCCTCAGCCTCCTGAGTAGCTGGGATTACAGCATGCACCACCATGTCCGGCTAATTTTTGTGA
Y

CTTTAGTAGAGACAGGGTTTCACTATGCTGGCCAGCCTGGTCTCAAACCTCCTTACCTCAGGTGATCTGC
CCGCCTCGGCCTCCAGAGTGTCTCAGATTACAGACGTGAGCCACTGGTGCTGGCCTAGACTCACTTTC
AAGTGGCATAGACTTGTAAAATTATTTAAAGGTGATAGGTCTACAATGATCCTGTCAATTAG

FLA307155 (Y = C/T) (SEQ ID NO: 459)
AGAAAATCCAGAATAATAATAATTTGTCAATAGGAAAGACATTTCCACTGGGGGTTAAGAAGGAAGACA
TTGGAACAATGATAGCCACCACCTTATTGAATGCTTACTGTGAGCCAGGTGGCACTTCACCTTGTTTCAT
TCTCACAACAGTCTAGGGAAGTAATTACTAATGTCTCCATCCACCTCTTGTTAGATGAGCAA
Y

TGAGGCTCATTGAGGCTAGGAAATGCACCCACACTCACATAGCCCATAAGAGGCAGCCATGGCATTGGG
CCCAGACCATGTGAACTTCAAAGACTACACGAGCAGCCACTGGGCAGCTGTTCATGGCTAAAGCCACTTG
AATTCAGCCCAGCAGCAACCCCCCTCTCCAGGAGGGGCACATAAGCTTGCAGCTTTGGGTAGA

FLA307165 (Y = C/T) (SEQ ID NO: 460)
GAATAATAATAATTTGTCAATAGGAAAGACATTTCCACTGGGGGTTAAGAAGGAAGACATTGGAACAAT
GATAGCCACCACCTTATTGAATGCTTACTGTGAGCCAGGTGGCACTTCACCTTGTTTCATTCTCACAACA
GTCTAGGGAAGTAATTACTAATGTCTCCATCCACCTCTTGTTAGATGAGCAAACCTGAGGCTCA
Y

TGAGGCTAGGAAATGCACCCACACTCACATAGCCCATAAGAGGCAGCCATGGCATTGGGCCCAGACCAT
GTGAACTTCAAAGACTACACGAGCAGCCACTGGGCAGCTGTTCATGGCTAAAGCCACTTGAATTCAGCCC
AGCAGCAACCCCCCTCTCCAGGAGGGGCACATAAGCTTGCAGCTTTGGGTAGAAGCTGCACCTT

FLA308514 (K = G/T) (SEQ ID NO: 461)
GCAGTTTGGAAATTGCATCTTTGTTTTTACCTATATAATCACATGAAACCCGTGGTTCTCAAACGTCAG
CAGGCATCAGCATCACATGGAGGGCTTGTTAAAACAGATTTCTGGGCCCCAAACACAGAGTTTAAATTC
TGAAGGCCTGAGGTGGGTGTGAACATTTGCATTTCTAACATGTTCTCGATGCTGCTGCCGCC
K

CTGGTCCCCGAGAGCATGCCTGGGAGAACTGCCACCTTCGACCATGGACTGTGAGAATTCACATGGACCTC
AGAATTATAATCAGTCTCTCAGTTTTTACAGATAAGGAACTAAATCCAGAGAGATTGTTTTGCCAATGG
TGAACAGCTGGTTAAAGTCAGGATGGAGACTTTAATCCTAGTCAAGTGACCTTTCTCTGTGA

FLA308527 (K = G/T) (SEQ ID NO: 462)
TGCATCTTTGTTTTTACCTATATAATCACATGAAACCCGTGGTTCTCAAACGTCAGCAGGCATCAGCAT
CACATGGAGGGCTTGTTAAAACAGATTTCTGGGCCCCAAACACAGAGTTTAAATTCGAAAGGCCTGAGG
TGGGTGTGAACATTTGCATTTCTAACATGTTCTCGATGCTGCTGCCGCCCTCTGGTCCCGAGA
K

CATGCCTGGGAGAACTGCCACCTTCGACCATGGACTGTGAGAATTCACATGGACCTCAGAATTATAATCA
GTCTCTCAGTTTTTACAGATAAGGAACTAAATCCAGAGAGATTGTTTTGCCAATGGTGAACAGCTGGTT
AAAGTCAGGATGGAGACTTTAATCCTAGTCAAGTGACCTTTCTCTGTATTTATTTCCCTCC

FLA309851 (R = G/A) (SEQ ID NO: 463)
GTGATCTGCCTGCCTCAGCCTCCCAAATTGCTGGGATTACAAGGCGTGTGTTTTAAGCCACTCAGTTT
GTGGCCACTTGTTACAGCAGCAAGAGGAAACTCATACAGTTATCATGTGAACTCACAGGAATATGGTGA
GTTAAAAAGAGAGGAAGGGTGCAAAACATCCACGGTAGAGTGAGAACTCTCCAGGGAGTGAG
R

ACTGTGCCCAGCATAACAGTGATCACCTCTTAGTAAGCTAAGTTTCTGAGCACCAGCTTTTTTGTAGTTG
ACTTTGTTGTCTTTAACATTTGAAGATCACCTTCTTTGCTCAGCCTGGCTTGCAGACCTGGGCTGATT
TGTGGATCTGATAGAAAAGTTTCCTTAGTTGGGCTCTTCTCCCCGACCACCCCATGCCAGT

FLA311122 (R = G/A) (SEQ ID NO: 464)
CCACAGTTATCAGCAGCCACAGGCTTGACTTGAGCAAGTTGGAAAGACAAATCAACTTCCAGAGTTGA
TTTAACATTGAGTGGAAATCAGTCATACTTTTGGTCCCCCTTTCGGGGCCACGCCTGGCACTGTGCCTGG
TGGCAGATCGGCATGAACTGGCCAGCTTCTGTGGCCCTGGAGGGCACAGGCAGAAAGGCCAC
R

121/131

CTCAGTCCCATGATGAACTGTTTAAGACTTATTGTTGTCTCCCCGCTCTGTAAAGTAGATAGAGTGGAT
TTTATGTCCCTTATTACCTTTTCAGGATACTTTGACTCAGGGAGATAAAGTAACTTGGGTACAGCTACTC
AGCTGGTGAAGAACACAGGCAGAATGAGTGCCTGGGTCTTTTGACTTAAAAATTCTGGATTTT

FLA311248 (S = G/C) (SEQ ID NO: 465)

CACTGTGCCTGGTGGCAGATCGGCATGAACTGGCCAGCTTCTGTGGCCCTGGAGGGCACAGGCAGAAAG
GCCACACTCAGTCCCATGATGAACTGTTTAAGACTTATTGTTGTCTCCCCGCTCTGTAAAGTAGATAGA
GTGGATTTTATGTCCCTTATTACCTTTTCAGGATACTTTGACTCAGGGAGATAAAGTAACTTG
S
GTACAGCTACTCAGCTGGTGAAGAACACAGGCAGAATGAGTGCCTGGGTCTTTTGACTTAAAAATTCTGG
ATTTTTCACAAAGATCCTCTTACTTTTATTTCATTTACATAATAAATATATATTGAAGAGCTACTCTGTGC
CAAGCCCTGTGCCTAGATATACAGTGATAAATAAAGAGTAGCTTCTAGAGGTCACCTGGCGG

FLA311737 (Y = C/T) (SEQ ID NO: 466)

CCAAGTTCAGTGATAGAGAGCAGAGGTGAGGCGGCAGCAGAAACCACTTAAGGGACACCACGTGGCACT
CCTTCTGTGCTGAGAAGGCTGTCAGTAAGCTCACCATTATTTCTTATTTCTCTCTCTGAGTTAAATAG
GAAACATGTCTCGCATTACTTGAAAAATCAAGTCAAACATATGCTCTTACTAGGAGTTATGGT
Y
CTTTTTATGTCTTAGATGATGCTTGATCTAGATGAATGCGGACTTGCTGTAGCTAGATAAATACAATGG
GAGTTTGAAGGTGTTTTCGTAGCCCTGGAAATAGGTATTTTCTGTCAAACAAGCTTTGTTCATTGCCAGC
AGACAAAAGCATCAGTAACCTTGCTTGATAATCGTCATTTCTTAGGAATAAAGTAGACTGTA

FLA312038 (Y = C/T) (SEQ ID NO: 467)

AGGTATTTTCTGTCAAACAAGCTTTGTTCATTGCCAGCAGACAAAAGCATCAGTAACCTTGGTTGATAA
TCGTCAATTTCTTAGGAATAAAGTAGACTGTAGAATTTTTTTTAGCAGAAAGGAAACCCAAAGATAATTC
TAGTGCAAATCCCTCACTTTATAGAGCAGAAGCTCAAGTCCCAGAGGAACAAGTGGCTTGAA
Y
GAACATCAGAATTTTAGGGCTGGATTGTACCCCTCCTGGTGCCAGCAGCCCACTTCCCTGCAGGAGGC
ACTCACCTTCCCTGCACAGGGGTATGAGTGTGGCCATTTTCCACCATAATCTCTGTAGCTCATGTTC
AATTGGGTTCCTTGAAGAAAAATGGACCAGTAAGTTGGAGCAGAATCATTTCAGATGGTA

FLA312056 / SG13S30 (K = G/T) (SEQ ID NO: 468)

CAAGCTTTGTTCATTGCCAGCAGACAAAAGCATCAGTAACCTTGGTTGATAATCGTCATTTCTTAGGAAT
AAAGTAGACTGTAGAATTTTTTTTAGCAGAAAGGAAACCCAAAGATAATTCTAGTGCAAATCCCTCACT
TTATAGAGCAGAAGCTCAAGTCCCAGAGGAACAAGTGGCTTGAACGAACATCAGAATTTTAG
K
GGCTGGATTTGTACCCCTCCTGGTGCCAGCAGCCCACTTCCCTGCAGGAGGCACTCACCTTCCCTTGCACA
GGGGTATGAGTGTGGCCATTTTCCACCATAATCTCTGTAGCTCATGTTCAATTGGGTTCCTTGA
AGAAAAATGGACCAGTAAGTTGGAGCAGAATCATTTCAGATGGTATAACATAAGGAAAAACTT

FLA314532 (Y = C/T) (SEQ ID NO: 469)

GTGAGGCAAAAGTACTTTGTGCGTTACCTAGGAGAGAGAACGCAGAGGTAGGTAACCTGGGACTACTAAA
GAACTGTGGAGCGATTCCCTGATTTTTTGAGCAGGAAGAGTGACAATTCAAACAGTATTTGACTAGATTC
ACGGCTCCGTAGCATCCCTTGGGTGGGAGGGGGAAGCTGACTAGGACCTCTGATTCTTCT
Y
TCCCTGAGCTTTGAAGGCTCTGAAAATACAGCTGGGGGGACTTGCCCACTTTTCTTATTAAGCAATTCC
TCCGCATGGTGTGGCTTTTCAAAGGGTGCTTCAGTGCTGTTTGTCTGCACGTGCCTTGCAGCCCCACACC
CTGCACTCCCGCCCTGCAGAGTCTGGCGCTGGAATGACATTTTAGGTCTGGGTTCCTCAGGCC

FLA315014 (R = G/A) (SEQ ID NO: 470)

CATATCTTTCAGGGACCAGAAGAAAGAATGTTGGGAAAATAAGATGCAGTAAGATGCAGACATGACAGC
AGGGTGCAGCGGCTCACGCCATATAATCCCAGCACTTTGGGAGGCTGAGGTGGGTGGATCACCTGAGGTC
AGGAGTTTGAGACCAGCCTGGCCAACATGGTGAAACCCCGTCTCTACTAAAAAATATACAAA
R
CATTAGCCAGGCATGGTGGTGGGCGCCTGTAATCCCAGCTACTCCATAGGCTGAGGCTGGAGAATCGCT
TGAACCCAGGAGGCAGAGGTTGCAGTGAGCCGAGATTGCGCCACTGCACTCCAGCCTGGGCAACAAAAG
CAAAACTCCATCTCAAAAAAAAAAAAAAAAAAAAAAAAAAAGATGCAGACACGAGACTGTGA

FLA315232 (W = T/A) (SEQ ID NO: 471)

122/131

GGTGGGCGCCTGTAAATCCCAGCTACTCCATAGGCTGAGGCTGGAGAATCGCTTGAACCCAGGAGGCAGA
GGTTGCAGTGAGCCGAGATTGCGCCACTGCACTCCAGCCTGGGCAACAAAAGCAAACTCCATCTCAAA
AAAAAAAAAAAAAAAAAAAAAAAAAAGATGCAGACACGAGACTGTGAACTGACTAGCATCACC

W

TTGCATTGTTTATAGATGTTGCCAGACAGAAAGCCCCAAAGCAGCACAGTACCTTCCTGACATCTGGAC
TAGGAAATCTAGATTTTAGTAAAATACATGCTAATACTTACAGAAGAAATGTGCGCGTTAGAGTATGCC
GTCAGTTCCTTAGAGATTGCAATTCCTAATGCACTAGTATGGTTTCAGGTGCCAGGAACACG

FLA315355 (R = G/A) (SEQ ID NO: 472)

AAACTCCATCTCAAAAAAAAAAAAAAAAAAAAAAAAAAAGATGCAGACACGAGACTGTGAACTGACTA
GCATCACCATTGCATTGTTTATAGATGTTGCCAGACAGAAAGCCCCAAAGCAGCACAGTACCTTCCTGA
CATCTGGACTAGGAAATCTAGATTTTAGTAAAATACATGCTAATACTTACAGAAGAAATGTC

R

GCGTTAGAGTATGCCGTCAGTTCCTTAGAGATTGCAATTCCTAATGCACTAGTATGGTTTCAGGTGCCA
GGAACACGTTCTGTGAGGCTGCTGCCCCAGGTGCTGACCCACAGCCTTCACACCATTTTCCTTCCTTGT
GTTACAGCCGCTCTGTCTTTTACAATAGCACCCCTCTCTAGTGGCTAATGGGCTCTATGAT

FLA315611 (K = G/T) (SEQ ID NO: 473)

GGTTTCAGGTGCCAGGAACACGTTCTGTGAGGCTGCTGCCCCAGGTGCTGACCCACAGCCTTCACACCA
TTTTCTTCCTTGTGTTTACAGCCGCTCTGTCTTTTACAATAGCACCCCTCTCTAGTGGCTAATGGGCT
CTATGATTAGATAGCATCCTTCAGTAGTGATAAAGGCAGTGACATCCTAGGGAGGTGAGCGG

K

TGAAAGCGCTATATCTGGAACCTGAGAGCCTGTGAAGCTCAAGGACTTGACGGGGTTAGACCGTGAG
CCGGGCTGCAGCTGGAAGAAAGTACTGTTCTTTTACAGAGATCCTTCCCTGTGCCATCTCTTTCTTCA
TTCCTCTCTAGTGGCATTCCTATTATCTCTTAAACCACAATTCCATTATCTCTCCTATTC

FLA316131 (S = G/C) (SEQ ID NO: 474)

AAGAGGGTCTTCTCTTTTGCCTGGCTCCCTATGCAGCCCTATCTTACCCCTGCAAAGTCCCAGGGATG
TGGCTCAGTCACTGCTCCTCTCTTCATCTGTCCACTTGCTTGAGATCCTACAGCTGCTTTAATTCCG
AGACCATCTGCAGAACATGACAAAATTTGTCCACCTACCCACATGTCCTTTTAACTTTAAAG

S

CTTTACTAACTGATTCTTATTAGGGAATGAACAGAGGTGGCAAAAATAAACAATAGGAGATTGATTTAC
AAGAAATCTTTAAATAGTAGATTTCTTCGGACCTCATTGAAATATAAATGGCCTGCCTTCTTGTGTCC
CTCCCTGGTCTCCCTCTTTAGGTGATAAGAAGAAGATCCTGCCAGCCCCATAACCCGCCATC

FLA316408 (M = C/A) (SEQ ID NO: 475)

CTTTAAATAGTAGATTTCTTCGGACCTCATTGAAATATAAATGGCCTGCCTTCTTGTGTCCCTCCCTG
GTCTCCCTCTTTAGGTGATAAGAAGAAGATCCTGCCAGCCCCATAACCCGCCATCTGCGCGGGTTCTAG
ACCCCTTCTCTCCCTCTGGCCGTGGTAGGCATTACTGATGAATCATGGTGCTCTTTCTT

M

CAGAGACCAAACCTGGCCTCGGAATCCTTCTTAACACAGATACTGCTTAACACAACCACTCTGAGCAGC
TGTCATAAGTAGAAGTAATAGATACTAGAAGAAATGTCTAAGCCTAATCTAGACCAAAATACGGCCTGA
TATAGATGCAAGCCAGAGGGGCTTTATGGTTAAATGCAAGGAGATTTTCAACCCGTCCGTCT

FLA316472 (R = G/A) (SEQ ID NO: 476)

CCCTGGTCTCCCTCTTTAGGTGATAAGAAGAAGATCCTGCCAGCCCCATAACCCGCCATCTGCGCGGGT
TCTAGACCCCTTCTCCTCCCTCTGGCCGTGGTAGGCATTACTGATGAATCATGGTGCTCTTCTTCC
AGAGACCAAACCTGGCCTCGGAATCCTTCTTAACACAGATACTGCTTAACACAACCACTCTG

R

GCAGCTGTCTAAGTAGAAGTAATAGATACTAGAAGAAATGTCTAAGCCTAATCTAGACCAAAATACGG
CCTGATATAGATGCAAGCCAGAGGGGCTTTATGGTTAAATGCAAGGAGATTTTCAACCCGTCCGTCTAG
AAGCTACTTGCTGAGATCTTCTTCAGTTGGGCCATCTCTCCCCAGGCCTCTCTTCTGTTT

FLA316515 (M = C/A) (SEQ ID NO: 477)

CCCCATAACCCGCCATCTGCGCGGGTCTAGACCCCTTCTCCTCCCTCTGGCCGTGGTAGGCATTAC
TGATGAATCATGGTGCTCTTCTTCCAGAGACCAACCTGGCCTCGGAATCCTTCTTAACACAGATACT
GCTTAACACAACCACTCTGAGCAGCTGTCTAAGTAGAAGTAATAGATACTAGAAGAAATGT

M

TAAGCCTAATCTAGACCAAAATACGGCCTGATATAGATGCAAGCCAGAGGGGCTTTATGGTTAAATGCA
AGGAGATTTTCAACCCGTCCGTCTAGAAGCTACTTGCTGAGATCTTCTTCAGTTGGGCCATCTCTCC
CCAGGCCTCTCTTCTGTCTCTGGGCTATGTCACACTTGAGCTCTGCAGACACCTAATGCTCT

FLA316569 (K = G/T) (SEQ ID NO: 478)
CGTGGTAGGCATTACTGATGAATCATGGTGCTCTTTCTTCCAGAGACCAAACCTGGCCTCGGAATCCTT
CTTAACACAGATACTGCTTAACACAACCACTCTGAGCAGCTGTGCATAAGTAGAAGTAATAGATACTAGA
AGAAATGTCTAAGCCTAATCTAGACCAAATACGGCCTGATATAGATGCAAGCCAGAGGGGC
K

TTATGGTTAAATGCAAGGAGATTTTCAACCCTGCCGTCTAGAAGCTACTTGCTGAGATCTTCTTCAGTT
GGGCCCATCTCCTCCCCAGGCCTCTCTTCTGTTCTGGGCTATGTCACACTTGGACTCTGCAGACACCT
AATGCTCTTGGGACCTGCTTTAGTTCTTGACCTCACCAACCGAGGAGGAATTGCTAGATGAG

FLA316607 (Y = C/T) (SEQ ID NO: 479)
TCCAGAGACCAAACCTGGCCTCGGAATCCTTCTTAACACAGATACTGCTTAACACAACCACTCTGAGCA
GCTGTGCATAAGTAGAAGTAATAGATACTAGAAGAAATGTCTAAGCCTAATCTAGACCAAATACGGCCT
GATATAGATGCAAGCCAGAGGGGCTTTATGGTTAAATGCAAGGAGATTTTCAACCCTGCCGT
Y

TAGAAGCTACTTGCTGAGATCTTCTTCAGTTGGGCCATCTCCTCCCCAGGCCTCTCTTCTGTTCTTGG
GCTATGTCACACTTGGACTCTGCAGACACCTAATGCTCTTGGGACCTGCTTTAGTTCTTGACCTCACCA
ACCGAGGAGGAATTGCTAGATGAGATCCTTCCCCCGGAATTTCTCTCTTGAACCCAGATGG

FLA316763 / SG13S32 (M = C/A) (SEQ ID NO: 480)
AGGGGCTTTATGGTTAAATGCAAGGAGATTTTCAACCCTGCCGTCTAGAAGCTACTTGCTGAGATCTTC
TTCAGTTGGGCCATCTCCTCCCCAGGCCTCTCTTCTGTTCTGGGCTATGTCACACTTGGACTCTGCA
GACACCTAATGCTCTTGGGACCTGCTTTAGTTCTTGACCTCACCAACCGAGGAGGAATTGCT
M

GATGAGATCCTTCCCCCGGAATTTCTCTCTTGAACCCAGATGGTCCGTTGCCCTTTCCAGAAGTTGC
TCCAGCCCTGTCCGCTTAGGAAGTTCAAGTGTATCCTTGATCCAGTGGGTAGGGAAGACATTCCATAAT
GAATGCCCCAGTCTGAGCTTCTTCTTCCAGGCTTCAGGCTGCCCTGCGAGGATTTTGCAGCT

FLA317496 (R = G/A) (SEQ ID NO: 481)
GAGTAGCTGAGACTACAGGTGTGCACTACCAACCCAGCTAATTTTTTGTATTTTTAGTAGAGATAGGG
TTTAGCTATGTTGGCCAGGCTGGTCTCGAACTGCTGAACCTCAAGCAATCTGCCATCCCCGGCCTCCCAA
AGTACTGGGAGTATAGGCATAAGCCACCCATGATGCCCAGCCTGAATCTTGGTTTCTTCCCC
R

TTCAATTTAAGCTATTACCTGGGCCTGAACTCAATGGCACCTGGCACCAACTGGCAACTGACTCTTGGTC
TTTTATTACCTACCTTCCCTAGCAGGCACTGGGTTGCTCCCTCTTCTTATCCCATGGAGTCTGTCTCTC
TGTTGGGGCTCCTACTGATCCTCTTGGCAATATGAAGTTCTCAGCTCAATGGTGGGTGGGCA

FLA317619 (R = G/A) (SEQ ID NO: 482)
TCCCCGGCCTCCCAAAGTACTGGGAGTATAGGCATAAGCCACCCATGATGCCCAGCCTGAATCTTGGTT
TCTTCCCCATTCAATTAAGCTATTACCTGGGCCTGAACTCAATGGCACCTGGCACCAACTGGCAACTGA
CTCTTGGTCTTTTATTACCTACCTTCCCTAGCAGGCACTGGGTTGCTCCCTCTTCTTATCCC
R

TGGAGTCTGTCTCTGTTGGGGCTCCTACTGATCCTCTTGGCAATATGAAGTTCTCAGCTCAATGGTG
GGTGGGCAATGACTGCCAACTCTTGAGGCCAATGAACTCAGGTTACCCCACTCCTCCTCCTGAGTT
GCTCACTCACTCCTCATTCACCTCAACATTGATTAGTAGATATTGCTACCTGCTCTGTGCC

FLA317620 (Y = C/T) (SEQ ID NO: 483)
CCCCGGCCTCCCAAAGTACTGGGAGTATAGGCATAAGCCACCCATGATGCCCAGCCTGAATCTTGGTTT
CTTCCCCATTCAATTAAGCTATTACCTGGGCCTGAACTCAATGGCACCTGGCACCAACTGGCAACTGAC
TCTTGGTCTTTTATTACCTACCTTCCCTAGCAGGCACTGGGTTGCTCCCTCTTCTTATCCCA
Y

GGAGTCTGTCTCTGTTGGGGCTCCTACTGATCCTCTTGGCAATATGAAGTTCTCAGCTCAATGGTGG
GTGGGCAATGACTGCCAACTCTTGAGGCCAATGAACTCAGGTTACCCCACTCCTCCTCCTGAGTTG
CTCACTCACTCCTCATTCACCTCAACATTGATTAGTAGATATTGCTACCTGCTCTGTGCCA

FLA317647 (Y = C/T) (SEQ ID NO: 484)
TAGGCATAAGCCACCCATGATGCCCAGCCTGAATCTTGGTTTCTTCCCCATTCAATTAAGCTATTACCT
GGGCCTGAACTCAATGGCACCTGGCACCAACTGGCAACTGACTCTTGGTCTTTTATTACCTACCTTCCC
TAGCAGGCACTGGGTTGCTCCCTCTTCTTATCCCATGGAGTCTGTCTCTGTTGGGGCTCC
Y

124/131

ACTGATCCTCTTGGCAATATGAAGTTCTCAGCTCAATGGTGGGTGGGCAATGACTGCCAACTCTTGAGG
CCAATGAACTCAGGTTACCCCACTCCTCCTCCTGAGTTGCTCACTCACTCCTCATTCACTCAACAT
TGATTCACTAGATATTTGCTACCTGCTCTGTGCCAGGTACCAGGTCAGTTGCTGAAGGAGTA

FLA317733 (W = T/A) (SEQ ID NO: 485)

CACCTGGCACTCACTGACTCTTGGTCTTTTATTACCTACCTTCCCTAGCAGGCACTGGGTTG
CTCCCTCTTCTATCCCATGGAGTCCTGTCCTCTGTTGGGGCTCCTACTGATCCTCTTGGCAATATGAA
GTTCTCAGCTCAATGGTGGGTGGGCAATGACTGCCAACTCTTGAGGCCAATGAACTCAGGTT

W

CCCCACTCCTCCTCCTGAGTTGCTCACTCACTCCTCATTCACTCAACATTGATTCACTAGATATTT
GCTACCTGCTCTGTGCCAGGTACCAGGTCAGTTGCTGAAGGAGTAACAGTGAACATGACGGAGTCTTTG
TCCCCAAGGAGACCCAAAGGTGTCTCCTAGAGCCAGGGGCACATTGCAAGACCAAATATATTC

FLA317744 (Y = C/T) (SEQ ID NO: 486)

AACTGGCACTGACTCTTGGTCTTTTATTACCTACCTTCCCTAGCAGGCACTGGGTTGCTCCCTCTTCC
TATCCCATGGAGTCCTGTCTGTTGGGGCTCCTACTGATCCTCTTGGCAATATGAAGTTCTCAGCTC
AATGGTGGGTGGGCAATGACTGCCAACTCTTGAGGCCAATGAACTCAGGTTACCCCACTCCT

Y

CTCCTCCTGAGTTGCTCACTCACTCCTCATTCACTCAACATTGATTCACTAGATATTTGCTACCTGCTC
TGTGCCAGGTACCAGGTCAGTTGCTGAAGGAGTAACAGTGAACATGACGGAGTCTTTGTCCCCAAGGAG
ACCAAGGTGTCTCCTAGAGCCAGGGGCACATTGCAAGACCAAATATATTTCAACTTACCAA

FLA317815 (R = G/A) (SEQ ID NO: 487)

TCCCATGGAGTCCTGTCTCTGTTGGGGCTCCTACTGATCCTCTTGGCAATATGAAGTTCTCAGCTCAA
TGGTGGGTGGGCAATGACTGCCAACTCTTGAGGCCAATGAACTCAGGTTACCCCACTCCTCCTCCT
GAGTTGCTCACTCACTCCTCATTCACTCAACATTGATTCACTAGATATTTGCTACCTGCTCT

R

TGCCAGGTACCAGGTCAGTTGCTGAAGGAGTAACAGTGAACATGACGGAGTCTTTGTCCCCAAGGAGAC
CCAAGGTGTCTCCTAGAGCCAGGGGCACATTGCAAGACCAAATATATTTCAACTTACCAAATAATCATA
GACCTAGTTCTCAAAAAGCAAGAAGACTGATTCCTCGTTGTCATTTCTCCTCCTCAGCATCA

FLA318219 (W = T/A) (SEQ ID NO: 488)

TTTTAGAGTCTGTGGGCCCTCCAAGTGTGGAGTATGGTGTACTTCACCAGAGTTTGAGGAGAAACAT
TCTTCTTTTGGGAAGGCCGGGAGCATAGATGGATATCAAGGCTGCTGTTTCTAAAAGCGAAACCCACCA
AACACAGTATTAGAATCATCTGTGGTGCTTATTAAAGATACAGATTCCTGGGCCCCATCCC

W

GACTTATGAATCAGAATCTCTGCCAGAGGAAGCCTGAGAATTTGCATTCTCAGATGATTCTGCATTCTC
AGATAACACATTCTTTAGGTGATTCTTACACACACTGGAGTTTGGGAATCGCTGAAGGCTGTTCACTTC
TCTTTTCTGAGAAATGATTCATTCAATTCAGAAATATTTGCAAGAGGTCCTTATTTATTGGAG

FLA319969 (K = G/T) (SEQ ID NO: 489)

GGTGGCCTCATTCGTGTGATAAATCTGAGCCACCACGATATTTGACTTTTCACAATTTAATTTATCTGA
ACCCTCTATTCTCTGGCTAAAAAATATCCCTTACTTGGACTTCTTTATTTTATTTTCAATTCCCTTACC
AGCACTAGCAGGGGACTCTGTACTCATCTGCTGGCGCTGCCATAACAAAGCACTGCAGCCTG

K

GGGGCTCAAACCACAGAATTTATTCTCTCACAGTCCTAGAGGCTAGAAGTCCAAGATCAAAGTGTGGGC
AGGGTCGGTTTCTCCTGCAGCCTCTCTCCTTGGCTTATAGAGTGCCACCTTCTACCTGTGTCTTCACAT
CATCACCTCACTGAGCATGTCTGTGTCCAAATCTCCCTTCTTATAAGACCCAGTCATACT

FLA320261 (R = G/A) (SEQ ID NO: 490)

TCTCTCCTTGGCTTATAGAGTGCCACCTTCTACCTGTGTCTTCACATCATCACCTCACTGAGCATGTCT
GTGTCCAAATCTCCCTTCTTATAAGACCCAGTCATACTGGATGAGGATCCACCCATATGAGTTCAATT
TTACCTTAATTATCTCTTTAAACACCCTGTCTCCAAATACAGTCCCATTCTGAGGAACTGAG

R

GTAAAGATTCAACATATGAATTTTGGGAAGGGACCTAATTCAGCCCACAACACCCTCTTTTGGGATGTTT
ATTTTCCCCCTTAAGGAGCTAGTTAGGATGTCTTATCTCATGAACATGACTGTGAACAGGAAAACAGGG
AGAGAATGAAGCTGGCCAAGGAACAGGGCTGGTGTGAGCTAGCAGTGCTTTTCTGATGTGAG

FLA320393 / SG13S42 (R = G/A) (SEQ ID NO: 491)

125/131

TTCATTTTACCTTAATTATCTCTTTAAACACCCTGTCTCCAAATACAGTCCCATTCTGAGGAAGTGA
GTAAAGATTCAACATATGAATTTTGGGAAGGGACCTAATTCAGCCCACAACACCCTCTTTTGGGATGTTT
ATTTTCCCCCTTAAGGAGCTAGTTAGGATGTCTTATCTCATGAACATGACTGTGAACAGGAA

R

ACAGGGAGAGAATGAAGCTGGCCAAGGAACAGGGCTGGTGTCTAGCTAGCAGTGCTTTTCTGATGTGAGT
GGGTCCACAGGGAGCTTGTAAAATGCAGATTCTGATTCTATTAGGTTCAGAGGGACCTGAGATTTCC
CATTTCTGACAAGTTTCCAGTGTGGGGGCTGATGCTGCTGGTCCACGGACCATACTTTGAGT

FLA320595 (K = G/T) (SEQ ID NO: 492)

CAGGGAGAGAATGAAGCTGGCCAAGGAACAGGGCTGGTGTCTAGCTAGCAGTGCTTTTCTGATGTGAGT
GGTCCACAGGGAGCTTGTAAAATGCAGATTCTGATTCTATTAGGTTCAGAGGGACCTGAGATTTCC
ATTTCTGACAAGTTTCCAGTGTGGGGGCTGATGCTGCTGGTCCACGGACCATACTTTGAGTA

K

CAAGGAGCTTGATACATAATGGCTGAGTGACTTTCAGACTCCTGCTGTAGAAAAATTATGAGTTGGCTG
GGCGTGGTGGCTCACGCCTGTAATCCCAGCACTTTGGGAGGCCGAGGTGGGCAGATCACCTGAGGTCAG
GAGTTCGAGACCAGCCTGGCCAACATGGTGAAACACCATCTCTACCAAAAAATACAAAAATTA

FLA321774 (Y = C/T) (SEQ ID NO: 493)

TCACTTAAGCCCAGAAGACTGAGGTTGCAGTGAGCCGAGATTGCACCACTGCCTCCAGCTTGGGCTAC
AGAGTGAGACTCTATCTCAAAAACAAAGAAACAAACAACAATAACAACAAAAACCAAGTCTCTCCC
TCCACTCAAAAATGCAAGGGCTGTCTCCCATTTGCTGGGTGCCAGGTCTCATGAATGTAGA

Y

ATGAATTATTCCAGTCAGCCTCAGGAGAATAGAATGAGCCCTCAGATGCCGAAGCACCTTTCAGATTCC
ACCGTTTTTATCGGCTCATTTAAACTTCACCTTCTAACACAGTCCTGCATTACACACGTGTCTGTCTGTTA
TGGGCAGCTGCAGAGAGGGTCTTAATGGTCCTAATGCTCAGTGAGGATGCCCAATGGTCAAC

FLA321966 (R = G/A) (SEQ ID NO: 494)

AATGTAGATATGAATTATTCCAGTCAGCCTCAGGAGAATAGAATGAGCCCTCAGATGCCGAAGCACCTT
TCAGATTCCACCGGTTTTATCGGCTCATTTAAACTTCACCTTCTAACACAGTCCTGCATTACACACGTGT
CTGTCTGTTATGGGCAGCTGCAGAGAGGGTCTTAATGGTCCTAATGCTCAGTGAGGATGCCCA

R

TGGTCAACAGAACCTGCCATCTTCAGGCCATCAAGGAGCTCTGGAGTTAAGGAAATCATGAGAGCACAG
AGGGGCGGGTACAGCAGAGCCCTCGTGGTAATGGGTTTTGAGGTCTAGGCTCTCTTCACTTGGGTTTGA
AATAAGTTCAATGACTAGTAATAGCTGAGACACTTCTACCCTTCAAATGAAGTAAATGGGAA

FLA322025 (W = T/A) (SEQ ID NO: 495)

GAAGCACCTTTCAGATTCCACCGGTTTTATCGGCTCATTTAAACTTCACCTTCTAACACAGTCCTGCATT
ACACACGTGTCTGTCTGTTATGGGCAGCTGCAGAGAGGGTCTTAATGGTCCTAATGCTCAGTGAGGATGC
CCAATGGTCAACAGAACCTGCCATCTTCAGGCCATCAAGGAGCTCTGGAGTTAAGGAAATCA

W

GAGAGCACAGAGGGGCGGGTACAGCAGAGCCCTCGTGGTAATGGGTTTTGAGGTCTAGGCTCTCTTCAC
TTGGGTTTGAATAAGTTCAATGACTAGTAATAGCTGAGACACTTCTACCCTTCAAATGAAGTAAATGG
GAAAAATGGAGCATTTGTTGAGTCCAGGGAGCTATAATTTAAACCCCATATATCTAAAAGGGGT

FLA322093 (R = G/A) (SEQ ID NO: 496)

TACACACGTGTCTGTCTGTTATGGGCAGCTGCAGAGAGGGTCTTAATGGTCCTAATGCTCAGTGAGGATG
CCCAATGGTCAACAGAACCTGCCATCTTCAGGCCATCAAGGAGCTCTGGAGTTAAGGAAATCATGAGAG
CACAGAGGGGCGGGTACAGCAGAGCCCTCGTGGTAATGGGTTTTGAGGTCTAGGCTCTCTTC

R

CTTGGGTTTGAATAAGTTCAATGACTAGTAATAGCTGAGACACTTCTACCCTTCAAATGAAGTAAATG
GGAAAAATGGAGCATTTGTTGAGTCCAGGGAGCTATAATTTAAACCCCATATATCTAAAAGGGTAAACATT
TTTGTGTGTGTGAAATTGGTGTCTATTCGCACTGCATCTACAGTTTTCTTTTCTTTCTCTCTTC

FLA323013 (R = G/A) (SEQ ID NO: 497)

ATTTATCTCTATACCCACAAACGACTAGTTTGTCTTCTCAAACCTAAATGATAATATTTAAAAATACACA
TCCTGGCCAGGTGTGGTGGCTCATACCTGTAATCCCAGCACTTTGGGAGGCCGAGGCAGGTGGATCACT
TGAGGTCAGGAATTAAGACCAGCCTGGCCAATATGGTGAAAGCCTGTCTGTACTAAAAATAC

R

AAAATTAGCCAGGTATGCTGGTGGATGCTTATAATCCCAGCTACTTGGGAGGTTGAGGCAGGAGAATTG
CTTGAACCCGGGAGGTAGAGGTTGCAGTGAGCCAAGATCATGCCACTGCACTCCAGCTTGGGCAACAGA
GTGAGACTCCATCTCAAATTAATAAAAAATACACATCTGGCTTCTGGAAAAATTACTTGAAGA

FLA323316 / SG13S34 (K = G/T) (SEQ ID NO: 498)

AAGATCATGCCACTGCACTCCAGCTTGGGCAACAGAGTGAGACTCCATCTCAAATTAAAAAATACAC
ATCTGGCTTCTGGAAAAATTACTTGAAGATCTTTTATGACATCCATCCCTCTTCACACAGCCATGTGAA
TTAGGTTGGTATCTTCATATACTAGCATCGTGCCAGCACTTCCATGTTATACAGTTTAAAA

K

GTTCTGTAATTCCCTGTGGGAACCTAAGATAATGCGAGGACCGTCATACGTGCCCCCAAATATTGGCAA
ACCAATGAATAAATGAATGAATGAGTTTATGAATCGCTAAGTGGCTGTATTTAATGAAGTATGTGTGT
GAGCCATTTCCACAGTGTGGACAGATTTGTCCACAAATATGGGCCTCTTCCCAAAGGCCCT

FLA323366 (R = G/A) (SEQ ID NO: 499)

CAAATTAAAAAATACACATCTGGCTTCTGGAAAAATTACTTGAAGATCTTTTATGACATCCATCCCT
CTTCACACAGCCATGTGAATTAGGTTGGTATCTTCATATACTAGCATCGTGCCAGCACTTCCATGTTA
TACAGTTTAAAAATGTTCTGTAATTCCTGTGGGAACCTAAGATAATGCGAGGACCGTCATAC

R

TGCCCCCAAATATTGGCAAACCAATGAATAAATGAATGAATGAGTTTATGAATCGCTAAGTGGCTGTAT
TTAATGAAGTATGTGTGTGGGCCATTTCCACAGTGTGGACAGATTTGTCCACAAATATGGGCCTCTT
CCCAAAGGCCCTACCACCTAATGCCATCACACTGGGGATTTGATTTCAACATGTGAATTTGG

FLA324591 (R = G/A) (SEQ ID NO: 500)

GTGATACTTTATTATGTGTGTGGATTGTGTAATGATGAAGTCAGGGCATTTAGGGTCTTCATCACCTTG
ATTATCATTTCTATGTGTGAGAACATTTCAAGTTCTCAGTTCCAGCTATTTTGAAATAGACAGTCCAT
TTTGTTAGCTACAGTCAACCAACCCGGCTGTCAGACATTGGAACCTACTCCTATTGAAGTGT

R

TATTTGTACCCATTACCAAACTCTCTTTGGGCTTTTCAAGTTTACAACCTGGGATGATCCTGGGAAAACT
AAAGTAAATCAGACACCCGACGTGTGAGCTAGGTTATAATATGCCAGTGGACCTTGGGGACATCTTAG
CTTTCAGAGGTCATGCTGTCCAAGCTGACTGTGGGGCTTCCAGAAGGTGGGGAGAGGAAATG

FLA324601 (Y = C/T) (SEQ ID NO: 501)

ATTATGTGTGTGGAATTGTGTAATGATGAAGTCAGGGCATTTAGGGTCTTCATCACCTTGATTATCATTT
CTATGTGTTGAGAACATTTCAAGTTCTCAGTTCCAGCTATTTTGAAATAGACAGTCCATTTTGTAGCT
ACAGTCAACCAACCCGGCTGTCAGACATTGGAACCTACTCCTATTGAAGTGTGTATTGTAC

Y

CATTCACCAAACCTCTCTTTGGGCTTTTCAAGTTTACAACCTGGGATGATCCTGGGAAAACTAAAGTAAATC
AGACACCCGACGTGTGAGCTAGGTTATAATATGCCAGTGGACCTTGGGGACATCTTAGCTTTCAGAGG
TCATGCTGTCCAAGCTGACTGTGGGGCTTCCAGAAGGTGGGGAGAGGAAATGATGCAATGGC

FLA324849 (S = G/C) (SEQ ID NO: 502)

CCTGGGAAAACTAAAGTAAATCAGACACCCGACGTGTGAGCTAGGTTATAATATGCCAGTGGACCTTG
GGGACATCTTAGCTTTCAGAGGTCATGCTGTCCAAGCTGACTGTGGGGCTTCCAGAAGGTGGGGAGAGG
AAATGATGCAATGGCCCATCAGAGGCACTACTTGGGGCCTGGGGCCAGAGTGCATGTCTAAG

S

CATTAAGGGGAGGGGAGAGCAGCCTTCATAATTATGAAGAGGAGTCTCAGGTGCACAGCTTCTGATGAG
GGACAGCTTCTAATTGAAGACAGCATTTGTGTAATGCTCAAACTCCCTGTCTTCAGAGTGCCTGCTGTAT
CCCACCATCAGTTCTGTGACTTCTCCCTAAGCCTCAATTTTGCATGTGTTACATTGGGATAA

FLA325369 (Y = C/T) (SEQ ID NO: 503)

TTCTGTCATAGCAAAATCTTGCAAATGTAGGGACTCAAAACAATATAAAATTTATTATCTGACAGTTTTT
CTGGGTCTCAGAGGCTTACTAGGCTGTAATCAGAGGGCAACCAAGCTGTGATCTCAGCTGAAGCTCAGG
ATTCTCTTCCAAGCTCACTGGTTGTTGGCAGAATTCAGTTCTTTCAGTTGGAAGACTAAAG

Y

CTACAGTCTTCAAGTCTCTAGAAGCCTTTTCTCTGGCACAGGTTTCTCTACAACATGGCCATTTATGTCT
TTAAGGCCAATAGGAGAACATGATTAGCATATTTTTTTTAAAGTGAACCTTTAGACCCTTTTTTAAAGGCC
TATCTGATTAGGCCAGGCCCAAGTGAGCTTTAAGTCAACTGATTAGAGATCTTAATTACATC

FLA326187 (R = G/A) (SEQ ID NO: 504)

CTGGGATTACAGACACACACTGCCACGCCTGGCTAATTTTTGTATTTTTAGTAGAGACGAGGTTTTGCC
ATGTTGGCCAGGCTGGTCTTGAACCTCCTGACCTCAAGTGATCCGCCCACCTCAGCCTCCCAAAGTGCTG
GGATTACAGACGTGAGCCACCATTAAACATTTTTCTATCTCTGTGGGAAAGGGCACAGTGA

R

AGAACAGATGAAGCTGAGACATACAAGTGAACCTCCTCCCTCCTCTCCATTTAGACTAAAAATAGGATTAT
TCATACTGAGATTCTCCCTGGTTGCAAAGAGATAATCTGTGCAACTGGGTTTTTACAATTATCCCTACC
CTATGCTTTTCCTCATCTGTCTTCCTCGTAGTCAGCTCAGGCTGCATAACAAAACACCATAA

FLA331374 (Y = C/T) (SEQ ID NO: 511)

128/131

GCTTCGTCTTGATGAAATGCTGAAAGAAAAGAAAGGAAAAATAAAGTAGCCATTATTTTGGCCCTTCCT
CCCACCCCATGTTTACTACTCTTATTTCTCTTTTGTATTGTTGTGTTGGAAGCACAGCATCAGAAAAA
CTCCCAGTTTTGAGAGATAACTCAGTGTTTAGTTCACTTAAACCTGAGAAAGGAGAAGAGGA

Y

GCCACCGTGAGGTCCAGGACGTAAAGAGGAAAAAACAGACAAAAAATCCATATGAAATGAAATGTG
AAAGAGGCGCTTTTCGAGCAGATGAGTGTGTAGATTACAGTGTGAGAGCTGTTGTGTCCAGAGCTGC
TTGCTGCACCTGGCGGGATAAACACTGGTCTAACAGAGGATCCTTGTTTCAAGGAGGCTGCC

FLA331395 (R = G/A) (SEQ ID NO: 512)

GAAAGAAAAGAAAGGAAAAATAAAGTAGCCATTATTTTGGCCCTTCCTCCCACCCCATGTTTACTACT
CTTATTTCTCTTTTGTATTGTTGTGTTGGAAGCACAGCATCAGAAAACTCCAGTTTTGAGAGATAAC
TCAGTGTTTAGTTCACTTAAACCTGAGAAAGGAGAAGAGGATGCCACCGTGAGGTCCAGGAC

R

TAAAGAGGAAAAAACAGACAAAAAATCCATATGAAATGAAATGTGAAAGAGGCGCTTTTCGAGCAGA
TGAGTGTGTAGATTACAGTGTGAGAGCTGTTTGTGTCCAGAGCTGCTTGCTGCACCTGGCGGGATAA
ACACTGGTCTAACAGAGGATCCTTGTTTCAAGGAGGCTGCCTTTTATTTGGGGGGACAAAAT

FLA331473 (R = G/A) (SEQ ID NO: 513)

CTTTTGTATTGTTGTGTTGGAAGCACAGCATCAGAAAACTCCAGTTTTGAGAGATAACTCAGTGT
AGTTCACTTAAACCTGAGAAAGGAGAAGAGGATGCCACCGTGAGGTCCAGGACGTAAAGAGGAAAAA
CAGACAAAAAATCCATATGAAATGAAATGTGAAAGAGGCGCTTTTCGAGCAGATGAGTGT

R

TAGATTACAGTGTGAGAGCTGTTTGTGTCCAGAGCTGCTTGCTGCACCTGGCGGGATAAACACTGGTC
TAACAGAGGATCCTTGTTTCAAGGAGGCTGCCTTTTATTTGGGGGGACAAAATTGTTCTTGAAAGCTGC
TCAGTGGTTCAAGCTACAGCATGGTGGACTAGCAGAATGGACTCCAGGGCCTCCGAGGAGAC

FLA331517 (Y = C/T) (SEQ ID NO: 514)

AGTTTTGAGAGATAACTCAGTGTTTAGTTCACTTAAACCTGAGAAAGGAGAAGAGGATGCCACCGTGAG
GTCCAGGACGTAAAGAGGAAAAAACAGACAAAAAATCCATATGAAATGAAATGTGAAAGAGGCGCT
TTCGAGCAGATGAGTGTGTAGATTACAGTGTGAGAGCTGTTTGTGTCCAGAGCTGCTTGCTGC

Y

GCACCTGGCGGGATAAACACTGGTCTAACAGAGGATCCTTGTTTCAAGGAGGCTGCCTTTTATTTGGGG
GGACAAAATTGTTCTTGAAAGCTGCTCAGTGGTTCAAGCTACAGCATGGTGGACTAGCAGAATGGACTC
CAGGGCCTCCGAGGAGACAGTGACTGCTGCCAGAAATAGTCAAGGATAGAAAGGAAGGACTT

FLA331526 (Y = C/T) (SEQ ID NO: 515)

AGATAACTCAGTGTTTAGTTCACTTAAACCTGAGAAAGGAGAAGAGGATGCCACCGTGAGGTCCAGGAC
GTAAAGAGGAAAAAACAGACAAAAAATCCATATGAAATGAAATGTGAAAGAGGCGCTTTCGAGCAG
ATGAGTGTGTAGATTACAGTGTGAGAGCTGTTTGTGTCCAGAGCTGCTTGCTGCACCTGG

Y

GGGATAAACACTGGTCTAACAGAGGATCCTTGTTTCAAGGAGGCTGCCTTTTATTTGGGGGGACAAAAT
TGTTCTTGAAAGCTGCTCAGTGGTTCAAGCTACAGCATGGTGGACTAGCAGAATGGACTCCAGGGCCTC
CGAGGAGACAGTGACTGCTGCCAGAAATAGTCAAGGATAGAAAGGAAGGACTTCACTGAGGC

FLA331651 (S = G/C) (SEQ ID NO: 516)

CGCTTTCGAGCAGATGAGTGTGTAGATTACAGTGTGAGAGCTGTTTGTGTCCAGAGCTGCTTGCTGC
ACCTGGCGGGATAAACACTGGTCTAACAGAGGATCCTTGTTTCAAGGAGGCTGCCTTTTATTTGGGGGG
ACAAAATTGTTCTTGAAAGCTGCTCAGTGGTTCAAGCTACAGCATGGTGGACTAGCAGAATG

S

ACTCCAGGGCCTCCGAGGAGACAGTGACTGCTGCCAGAAATAGTCAAGGATAGAAAGGAAGGACTTCAC
TGAGGCCTGGGAGAAGATTATGGAATGGGACTGACAGCAGTGACGGGGAGTAAAGGGGGTGTCTGGGG
GAATTGTGCCCCATGGTGAGAGCTAGAGGGTTCAAAAGACTTAACCCGACGCATCTCTCTC

FLA331841 (R = G/A) (SEQ ID NO: 517)

TAGCAGAATGGACTCCAGGGCCTCCGAGGAGACAGTGACTGCTGCCAGAAATAGTCAAGGATAGAAAGG
AAGGACTTCACTGAGGCCTGGGAGAAGATTATGGAATGGGACTGACAGCAGTGACGGGGAGTAAAGGG
GGTGTCTGGGGGAATTGTGCCCCATGGTGAGAGCTAGAGGGTTCAAAAGACTTAACCCGAC

R

CATCTCTCTCACCTGGAGATTGGGCCCGTTCAATCTAACTGGATGGCTATAATTTAAAAGGTTTAGGT
ATTATGACAAACATGGATATATTAGGTGATAGCAATGCAAAATGCATATGGCTTCTTGATATAAAACAC
AAGACTTGAAAGCAGCATCTTTGGCTGGGTACTACAGCCACCTCCTCTGTCTACTAAGGGAG

SG13S86 (R= G/A) (SEQ ID NO: 518)

CAGCAACATATCTGTGTGCCTGTCTGGGTTGTAAAAAGGGTCAAAGATCAATGCAGCAGGCAGCTACAT
GCTGGCAAAAGCCAGAGGCAGCTGGTCTGTTTGCCTGTGCCAGGAAACCACTGGGAATGGGGTTGTGTG
TTATTCTAGGAGAAAGTCGTCCCAGCAGCAGCTTCTCCAGGGGCATCCAAGAGCACTGAAAA

R

GGTTGCAAGATGACCCATGAGGCTGCAGGAAGAAAAGAACATGCATTTAATCTTGCTATCTGAAAAGTA
AGACATGAAGCTTTCCTCATTTTTTAATATACACATGGACAGTAGTATGTGTATATAGTTTATATGCAAA
TATACTTGTTTATAAGGTTGCATGCTCAAAATTTTTGGTTCATGGGGTGTGGGATCATAAATG

SNP13B_R1028729 (Y=C/T) (SEQ ID NO: 519)

CTACAAAAATTACCATCATATGCTGTGCATGTCTGCCAGTCTATTTATCATATTATTTAAGAAACA
AACATTTATTGAAGATTTATCATGTGCTCAGCACTGCCAAAGAGGAAATAAAGAGCATAATATCTATTC
TTAGAAAATAACATTAACACAAATAGAAAACAAGAAACCATAATGTTAAAAATATTACATAG

Y

AACACAGAAAGACAATGTATAATTATACATACGCACTAAAGCAAAGATAACATAATTTATAAATTATGA
GGTACAGAATAGTTAGATTCTGAAAATTAATAAATCAGGAAAAACTTCATGAAGATGAGATCTGGGCT
GGATCCCAAGGATAGGCAGGTGGATCATGTAGAACAGGGGAAAGGAGTTCCTGATCGGGGA

SNP13B_Y1323898 (R=G/A) (SEQ ID NO: 520)

GAAACTAAAGAAAGCCACAAAGTTTACCTCAATGCCAAGACATTTCTTGATTTTTGAAAACCCAGTTG
TCGAACCACCCATCTATAGAACTTGAAAGACTAAAACTATCTTACTCTAAACATTTTCTAGGAAGTT
GATTCTACAACACATTTTGGTTTTTCCAATTTGGCTTCTAATAATTATTTCAAAGTTTCTGTG

R

CCTAAATTTTGTTTTACATTGATCCTTTGAATGGACTACTGTTTCCACATTTTAGAACATTTAAAAAGA
TATCTACAACCCGAGTCTAATCATAAAAAAATCAGACAGATCCAAAATGTGGAACATTCCACTAAAAA
AGGAGTGGGGAGAGGTCTTTATTCTTCCAAAAATATCAATGCCATAAAAGACAAAGACGGCT

SNP13B_K912392 (Y=T/C) (SEQ ID NO: 521)

TGTGGTATGAGGTAAGGATCCATTTTTTTCCCATTTGCATAGCCAGTTTTTGTAGCTCCACTTTATTTT
CTCACTTGATCTGCCATGCCACCTCTAGCATGTATCAACATATCATGTATGTGTGCAGCTGTTCTTAA
CTCTCAATTTTATTTCTTCTTGGTTACTTTGTCTAACCCAGCACTCATACTTTTTAAATTATTA

Y

GGCTACCTTGTAGGGCAAGAATCCTCACTTTTATTCAACTTCTTTTGAAGTGTCTTGATGCATATTTTT
TCTGATCTTACTTGGCCATATATATTTTGGGGACAGATGTGACATCATACCAAGCTTTCTTTGCTTGAC
ATTGTAGATATTTTCTTATTTCATTAATGTGCTAAAAATTTTGAGTTTGGTCATACAGTCTTT

SNP13B_R1556428 / DG00AAFQR (R=G/A) (SEQ ID NO: 522)

GAGATTATATCCCACCTACCACTGCAGCTCCAGGATCCAGCTTCACAAACATTTGTTGAATGAATGAAT
AAGAAAAGAGGACACCCCCAAAGAGGCTGCAAGGGAAAAAGCTACAAAGACAGAAGCACCAGGAAAAAG
TAGGGTCATGTAAGTCAAAGCAGGAAAAAAGTTCCATGGTGGGGTGGTCAGCAGTGTCTAAT

R

CCACGAAGGCACAAAGTAGGATAAAGGTTAAAAATCAGCCTTTGGT'TTTGGCAAATATGAAGCTTATCG
GTAGCCTTAGCGAGAACAATTCCATCAGGGAGCAGAAGCTAACTGCAGTGGGTTGAGTCATCAAGCAGG
CATAAGGAAGTAGGGATACCCCATTTATAAGCTACTCTTCAAGAAGCTCAAATCTGAAGGTT

DG00AAFIIV (W=T/A) (SEQ ID NO: 523)

TATAAATGATCATTATGTTTCATATTCACACATACAATAATGTACTCAAGTTTATTGCTAAGGTAATTCA
GAATCTCCTTATTTTGAAGTGTGCATTTGATATACCTGTTTGGGAATAACTAGTTTCTTATCTTTGACA
GAAAAATAATTTGTTGTTTTGTTTTTACTAAAAAAGCATGGTGAAAAATGGCTCCATTTCTA

W

GAGAGGTAACATAAATATCGCAATTTGCTGGGTGTCATTAAAGTAACTCACAAGGGAAAAAATGCAAAT
TGGTATCTGCTGATGGAGTAAATCTCCGCAGAAGTGATGACCCTGAAAGGATCAATATATTAAAGCCCC
TCCAGCTGGTTCATTCCAGATTGCAACAATAAAGCATTAAGTGT'TAAACCTCAAGGCAGCT

DG00AAFJT (M=C/A) (SEQ ID NO: 524)

ATCTTCAGAAATTGTAATGATGAAAGAGTGCAAGCTCTCACTTCCCCTTCTGTACAGGGCAGGTTGTG
CAGCTGGAGGCAGAGCAGTCCTCTCTGGGGAGCCTGAAGCAAACATGGATCAAGAACTGTAGGCAATG
TTGTCTGT'TGGCCATCGTCACCCTCATCAGCGTGGTCCAGAATGGTAAGGAAAGCCCTTCA

M

FIG. 7 T

TCAGGGAAGAACAGAAGGGGAGATTTTCTTTGATGGTTGTTTGGAAAGTCAGGCTTAAACAATTGTGTCT
GTGTGTGCGCATGCACAAACACTTTTACCTTATCTTTATTTTCTTCTTTTATTTGAATGTATAGGGTT
GTGTGTATTTCTGTGTAAATTTGGGGTTTTCTCCTCTTAGTCTTTCACTTTGTGGTGATT

DG00AAHII (R=G/A) (SEQ ID NO: 525)

AATTTTGGAAAGCATTTTTCATATGCAGTGTATACTTCAGAAAGAGAGAGAGAGAGAGGAAAATTGTCCCT
GTTTCAGCGTTTGCATTTCCATTATTCCTGCTATTAGTTAAAAACAACAACAACAAAAACAAGCAG
GATACCTAGATCTGGAAAAGGGAGAATTGTGTAGAGCTGTCTTCTTAAAGTTCTGAGTTAGG

R

CTGCCTCAGACCACTTTTCATAACTATCTCCAGTGGCTTTGTGTTTTATATTTATTAAGATAGAGAAAA
AAGAGTAATTACTAAGGGCAGCTGCTGTAGCTTTATGGTGATTACTGAACATTGACATGCTGTACAGTT
TTTGGAACCTTGAGTATTTAATCACTTTGGGATATTCTATTTTCCCCCATCTTGAGTGTGGA

DG00AAHID (W=T/A) (SEQ ID NO: 526)

ACAGTTGTCTTGCCTGTGTTCAGGAAGGGAGTTTCTGTGGTCCCTTTGAAACCACAGAAGAGCCCCCTCG
TATAGCTCTCAATGGAGGGGGCAAACATTCAAATAACTCAGGAGATAACACAACCTATTTGTTTTTAAC
TGTGAGTTTTTAGGCAATCACAAGATCCAGATGTATGTCCAAGCCTCTCTTTGCAATTCTA

W

TTAACCTCAATGTTGCAACCATAGACCTACCTTACAGAGTTCAAAAAATATGCAAAAACCTGCTTTT
CTTCTTCTCATACCCCAAATGCCATTCTGAACATTTCTGTAGTTAAAAAAGATTTCCATGGTGT
TACCAGGCACTGTACACAGTCTGTGTCCCAAGACAAGGAGGTACAGTTCCACATGCGCCCAT

DG00AAHIJ (R=G/A) (SEQ ID NO: 527)

AATCATCTGACTTTTAGAGAGTAGACACTTGCTCCATGCATATTGCCTCCAATTCATTCAAGCACT
CCCTGCTCAAGAAGTTCTTTCTTATGTTGAGCTGAAATCTGCAGCCCTATGCGTTTTACCCAGCAGTCC
TGTGCTGTTCCTAAAATCACTTAGACTGTGCTGCTCTTCTGTGTTTACAGTGTGAGT

R

TAATATCCCCCTCTTCGGCCTAACGTTTCTGAAGTCCCTTGCCACTGGGTCTCCTCTCTCTTCTCTGTG
TTCTTTCTAAGAACACCTATGCAGATAGGTGTCTTCTGTACAGGGAAGCTGTTCTGAGATCCGGGCAT
CGACTCTGTTAGAATAATCTACGTATGAGTTATTTTTTTGAGAACTATGTGTCAATTGCTGAC

DG00AAHIH (R=G/A) (SEQ ID NO: 528)

TTATGTTGAGCTGAAATCTGCAGCCCTATGCGTTTTTACCCAGCAGTCCCTGGTGCTGTTCCCTAAAATCA
CTTAGACTGTGCTGCTCTTTCTGTGTTTACAGTGTGCTGTAATATCCCCCTCTTCGGCCTAACGTT
TCTGAAGTCCCTTGCCACTGGGTCTCCTCTCTCTCTTCTGTGTTCTTTCTAAGAACACCTAT

R

CAGATAGGTGTCTTCTGTACAGGGAAGCTGTTCTCTGAGATCCGGGCATCGACTCTGTTAGAATAATCTA
CGTATGAGTTATTTTTTTGAGAACTATGTGTCAATTGCTGACTCATATTAACCTCTGTGGTTAACTAAAAT
CTCAAGATCTCTTTATGTTTGTGAGAACTTATTTAACTTCTCTGGCCCTCCGTTTCCTTC

DG00AAHIE (M=C/A) (SEQ ID NO: 529)

AACACCTATGCAGATAGGTGTCTTCTGTACAGGGAAGCTGTTCTCTGAGATCCGGGCATCGACTCTGTTA
GAATAATCTACGTATGAGTTATTTTTTTGAGAACTATGTGTCAATTGCTGACTCATATTAACCTCTGTGGT
TAACTAAAATCTCAAGATCTCTTTATGTTTGTGAGAACTTATTTAACTTCTCTGGCCCTC

M

GTTTCCTTCACTGAGCAGTGGAGTGATTGATAACCTCCACCTGTGGTTGCTGAAGGTCTTGCACAAGAT
GATATAGTTAAAGTAGCTAGCAGTGGCCACGTACGGCGGATGCCTCACAACGGTTTGCAGCCATCTCTC
TATCTGTGTCTTTGTCTCTCTCACACTGGTTTTTGGCTTACTGTTAGCAGCTAGCCGAGAT

DG00AAHIG (Y=C/T) (SEQ ID NO: 530)

CAAAGAAGGTGTCTTTGATGAGGCAAGGTCAAAACTTCTCCCCAGACGAAATCCAAAGAAAAGCATTCCT
ACTATGCTATATCAGTTTGGAAAGAAAACTTCTGCCAGGTGACTGCATTCTCACTGGTCAATTTGTGT
TCCTATGGACTCCTCAGCTCAACCAATTTGGAGAAGTTATGGTGCAATTTACCATATCTGG

Y

TAGAAGTTAAGTTTCCAATTTGCTGGCAATGAAGAAGAAATGGAGCAGGCCAGGCTGTGTAGTTTCTGC
CACGTGCCCCCGGGAGTGAACAGCTCTGTTTGTAAAGGCCATGGTGCTTAGACCTGGGCTCGCTAGTT
GCCAGCCTCCAAATTGCAGAAGTGCCCTTTGGTTGGTGGCTATGCTGTGTCACTTGGGAAGG

DG00AAHIF (S=G/C) (SEQ ID NO: 531)

131/131

CCTGGGAAAACATAAGTAAATCAGACACCCGACGTGTGAGCTAGGTTATAATATGCCCAGTGGACCCCTG
GGGACATCTTAGCTTTTCAGAGGTCATGCTGTCCAAGCTGACTGTGGGGCTTCCAGAAGGTGGGGAGAGG
AAATGATGCAATGGCCCATCAGAGGCACTACTTGGGGCCTGGGGCCAGAGTGCATGTCTAAG

S

CATTAAGGGGAGGGGAGAGCAGCCTTCATAATTATGAAGAGGAGTCTCAGGTGCACAGCTTCTGATGAG
GGACAGCTTCTAATTGAAGACAGCATTTGTGTAATGCTCAAACCTCCCTGTCTTCAGAGTGCCTGCTGTAT
CCCACCATCAGTTCTGTGACTTCTCCCTAAGCCTCAATTTTGCATGTGTTACATTGGGATAA

DG00AAHOI (R=G/A) (SEQ ID NO: 532)

GGAGAACATGATTAGCATATTTTTTTTAAAGTGAACCTTTAGACCCTTTTTTAAAGGCCTATCTGATTAGG
CCAGGCCCAAGTGAGCTTTAAGTCAACTGATTAGAGATCTTAATTACATCTGCAAAGTCCCTTCATGTT
TACCGTATAACATAACTTAGTGAAAGGAGTGAAATTGCAACCAGGTTCTGCCTGCACTCCAC

R

GAAGGGGATTCTGCAGAAGTGTGGGTACGGGGGGGTTATTTTGGGATTCTGCCTACGTCACTGAGTCA
AAAGAAGCTGAATGGTTGTGATGCTGAGGTTTTTGGGCAGCAGCAGTGTGTGTGTGTGAGTGAATTCAT
ACGTATGACCACCTGGGAAGAAAGGAGGCTGTGGTTTCTCCACCTCCTGGCAGACAGAGAA

SG13S35 / FLA324333 (R = G/A) (SEQ ID NO: 533)

AGTGCTCTCTAAAGAGCAGTGCTCTACCATCCAAGCTGGGCTTTTCTTTTCTTCTTGCTGATAGGGAAG
GCATGGGACATTGCAGGATGGAAGTGGCCCCCAGGCCCTTCTCATGCCTGGGCTTGGTTTGAAGGTGGT
CAGGTGATCAATAATCCTGATTGGCCTGGCATTGAGGAGTTTCTCTGGGATGTGGTCCTTTT

R

GTTTTTTAAAAATTATTTTTATTGATACACATATTTGTAGGTATTTGTGGGGTGCATGTGATACTTTAT
TATGTGTGTGGATTGTGTAATGATGAAGTCAGGGCATTAGGGTCTTCATCACCTTGATTATCATTCT
ATGTGTTGAGAACATTTCAAGTTCTCAGTTCCAGCTATTTTGAAATAGACAGTCCATTTTGT

DG00AAFIU / SNP_13_Y1323892 (Y=C/T) (SEQ ID NO: 534)

CTTCTTTTGCCCTGCCCTTCTGCCTTCTGTCTTTTAATTTGCGGGCTTTTGGCAACCACAGCACGGG
TCTGGTTTTCCTAGGAGTTTCTTTTGTAGGATCAAACCGCTAGTTGGCTCTTGGCCCTGTGATAGGGCCC
TGGGCTAACTTATTGGGAAAATGTTGCTGTAAACCCCTGCCCAGAGGTGCCTGTGACATGGGC

Y

GCCATCTTCTCCTCTTCCCTTGGCTTCAGCCCCACCTAGAAACCTGAACAAACATTTTCTTGACATTT
CATAAAGTGTGAGTGGCTCCTCATTTAGCAAAATACATCCCAGGGAAGTTCAAAGTGAAAAAAGGCCG
TAACTTCTTCTTCTTCTCAGGGACCTACAGAAAATATGTGGCACCTCGGCAGCCTGGCCTGC

DG00AAJFF / FLA287889 (R = G/A) (SEQ ID NO: 535)

GTGCAGTGGCGTGATCCCAGCTCACTGCAATCTCTGCCTCCTGGGTTCAAGTGATTCTCCTGCCTCAGC
CTCCCAGGGGGCTGGGATTGTAGGCGTGACCACTATGCCCATCTAATTTTTGTATTTTGTAGTAGAGAT
AGGGTTTTTGCCATTTTGGCCAGACTGTCTTGAACCTCCTGACCTCAGGTGATCTGCCTGCCTC

R

GCCTCCACAGTTTTGTGATTATAGGCATGAGCCACCGTGCCCGGCCTTAACCTTTGTTTTCTTACACA
ACACACTACGTGATTTTTCCACATGCATGGGTCAATTTGCTTCATTTACGTACAAATGCATAAGCAATA
TACTGTGTGGTGTGAGTTTTGTGATGGGAAAAGGAAGAAGTTTGCAGGATACTACACTGGCTT